# The Police and Fire Retirement System of the City of Detroit

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

Component I

June 30, 2022

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October 31, 2022

Board of Trustees
The Police and Fire Retirement System of the City of Detroit

Dear Board Members:

This report provides information required for the Police and Fire Retirement System of the City of Detroit in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67 "Financial Reporting for Pension Plans" and No. 68 "Employer Reporting for Pension Plans." These calculations have been made on a basis that is consistent with our understanding of these Statements. This information is subject to a review by the City's and the System's Auditor. Please let us know if the City's or the System's Auditor recommends any changes. This report covers the Police and Fire Retirement System Plan known as Component I (also known as the Hybrid Plan). Since Component II is a separate plan, it is detailed in a separate report.

Our 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. 67 and 68. The calculation of the plan's liability for this report is not applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The appendix of this report also provides some of the information necessary to complete the reporting requirements for the State of Michigan's Local Government Retirement System Annual Report (Form 5572). This information is not required to be included in your financial statements. The calculations in the appendix are based on assumptions that satisfy the Uniform Assumptions criteria published by the Michigan Treasury for Fiscal Year 2022 reporting requirements.

This report is based upon information, furnished to us by the System staff, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This report is based on the valuation date of June 30, 2021. The total pension liability was rolled-forward from the valuation date to the plan year ending June 30, 2022 using generally accepted actuarial principles. The asset information as of June 30, 2022 was provided by the System. This information was checked for internal consistency, but it was not audited by GRS. GRS is not responsible for any data received for the purposes of completing this report, including any member or financial data.

At the direction of the System and with approval of the System's Auditor, the long-term expected return on assets used to determine the discount rate is 6.93% net of investment expenses as of June 30, 2022, from 6.88% as of June 30, 2021. We have reviewed this assumption based on the System's asset allocation and have determined it does not significantly conflict with what, in our professional judgment, would be reasonable for purposes of the measurement.

The benefit provisions reflected in this valuation for the development of the end of year TPL are those in effect for Component I as of the end of the plan year on June 30, 2022.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the System on the measurement date for purposes of GASB Statement Nos. 67 and 68 reporting. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

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.

The signing actuaries are independent of the plan sponsor.

Jamal Adora, Judith A. Kermans, and James R. Sparks 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.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

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JA/JAK/JRS:rmn

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# SECTION A

## EXECUTIVE SUMMARY

# Executive Summary
# as of June 30, 2022

| | | |
|---|---|---|
| Actuarial Valuation Date | | June 30, 2021 |
| Measurement Date of the Net Pension Liability | | June 30, 2022 |
| Employer's Fiscal Year Ending Date (GASB No. 68 Reporting Date) | | June 30, 2023 |
| **Membership** | | |
| Number of~ | | |
| - Retirees and Beneficiaries | | 184 |
| - DROP Members | | 111 |
| - Legacy Disabled | | 85 |
| - Inactive, Nonretired Members | | 761 |
| - Active Members | | 2,551 |
| - Total | | 3,692 |
| Covered Payroll (excluding DROP)^ | $ | 158,718,175 |
| **Net Pension Liability** | | |
| Total Pension Liability | $ | 244,303,670 |
| Plan Fiduciary Net Position | | 275,590,423 |
| Net Pension Liability | $ | (31,286,753) |
| Plan Fiduciary Net Position as a Percentage of Total Pension Liability | | 112.81% |
| Net Pension Liability as a Percentage of Covered Payroll | | (19.71)% |
| **Development of the Single Discount Rate** | | |
| Single Discount Rate | | 6.93% |
| Long-Term Expected Rate of Investment Return | | 6.93% |
| Long-Term Municipal Bond Rate* | | 3.69% |
| Last year ending June 30 in the 2023 to 2122 projection period for which projected benefit payments are fully funded | | 2122 |
| **Total Pension Expense** | $ | 16,075,435 |

**Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses**

| | Deferred Outflows of Resources | Deferred Inflows of Resources |
|---|---|---|
| Difference between expected and actual experience | $ 23,245,487 | $ 15,209,414 |
| Changes in assumptions | 7,463,322 | 7,782,016 |
| Net difference between projected and actual earnings on pension plan investments | 23,437,600 | 21,969,869 |
| Total | $ 54,146,409 | $ 44,961,299 |

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

^ *Based on the June 30, 2021 census data. Excludes DROP covered payroll. Covered employee payroll for employer's disclosure may differ.*

~ *See the funding valuation for more detail regarding plan membership.*

# Discussion

## Changes Compared to Funding Valuation

For purposes of determining the Total Pension Liability (TPL) as of June 30, 2022, we note the following differences from the June 30, 2021 funding valuation:

- At the direction of the System and approval of the Systems' Auditor, the long-term expected return on assets was 6.93% as of June 30, 2022. It was 6.75% in the June 30, 2021 funding valuation, as required by the Plan of Adjustment.
- A 1.0% yearly compounded Cost of Living Adjustment (COLA) is assumed for the Variable Pension Improvement Factor (VPIF).
- The attribution period for the normal cost is the later of plan effective date or date of hire to the earlier of DROP or separation of service, as required by the GASB statements.

## Changes Compared to Prior Year's GASB Report

The changes in actuarial assumptions compared to the June 30, 2021 GASB No. 68 reporting were:

- The change in the long-term expected rate of investment return from 6.88% to 6.93%.
- A change in the demographic assumptions to reflect the 2015-2020 Experience Study.
- The yearly compounded COLA assumption was changed from 0.5% to 1.0%
- The assumed administrative expenses normal cost rate was changed from 1.20% of payroll to 1.07% of payroll, consistent with the 2015-2020 Experience Study.

These changes decreased the TPL by $8.6 million resulting in a new deferred inflow for recognition in the pension expense.

## Funding

Employee contributions are initially set to 6.0% of pay for members hired before June 30, 2014 and 8.0% of pay for members hired after June 30, 2014, but can be increased if necessary to maintain funding levels at 100%. Employer contributions are initially set at 12.25% of payroll. Employer contributions are actuarially determined beginning in fiscal year 2024 to be the amount necessary to fund the plan on an actuarial basis. In the projection that determines the Single Discount Rate, employer contributions beginning in fiscal year 2024 were modeled in a manner consistent with our understanding of the Board adopted Funding Policy.

## Post Retirement COLA

This plan has a post retirement COLA feature known as the Variable Pension Improvement Factor or VPIF of a 1% compound COLA. It can be granted (beginning July 1, 2015) only if a five-year projection shows the plan funded status as above 90% based upon a 6.75% future investment return. As of June 30, 2022, the primary results in this report assume a 1.0% compound COLA. We recommended this assumption in the 2015-2020 Experience study based on: the funded ratio of the plan; the Boards funding policy; the ability of the Board to move the Rate Stabilization Fund into the Pension Accumulation Fund; and our understanding of the City's desire to ensure the full VPIF is paid every year. In the notes section we also report the TPL based on a 0% VPIF and a 0.5% compound VPIF.

# Discussion

## Plan Amendments

Based on our discussions with System staff, we understand that future EMT will go into in the Police and Fire Retirement System (PFRS) and that current EMT members may elect to enter the PFRS but that it would be unlikely for current members to elect to transfer to the PFRS. EMT members may join this plan after June 30, 2021. Since the valuation date of this report is June 30, 2021, no EMT members were in the plan as of the valuation date. Furthermore, given the historic size of the EMT plan, we do not believe the incidence of EMT members entering the plan is significant enough to require changes to our normal roll-forward procedure.

We understand that new DROP plan provisions are in effect as of the measurement date. The new provisions allow Detroit Police Lieutenants and Sergeants Association (DPLSA) members to participate in the DROP program for a maximum of 15 years, up from the prior maximum of ten (10) years. We modeled this change by changing the DROP assumptions for this group. The assumptions we used were based on our analysis in the Experience Study. For eligible DPLSA members, it was assumed that 75% (up from 65%) of members would DROP and would stay in the DROP for an average of nine (9) years (up from seven (7) years). The change in the DROP provision combined with the corresponding change in the DROP assumption resulted in a $0.9 million decrease in the TPL.

## DROP Plan

DROP balances are currently (as of the measurement date) managed by an outside vendor and the amount of the balances is currently unavailable. The balances were not included in the reported assets and, therefore, not included in the computed liabilities.

# Discussion

## Accounting Standard

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

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

## Financial Statements

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

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

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

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

# Discussion

## Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) 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 pension plan investments is 6.93%; the municipal bond rate is 3.69% (based on the daily rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index" from the Fidelity Index); and the resulting Single Discount Rate is 6.93% as of June 30, 2022. For purposes of calculating the Single Discount Rate (SDR), the following simplifications were made to the projections:

(1) Voluntary employee contributions were excluded.
(2) The VPIF was assumed to be 1.00% compound each year.
(3) Mandatory employee contributions were assumed to be fixed at the current rate of 6% for members hired before June 30, 2014 and 8% for members hired after June 30, 2014.
(4) The VPIF reduction under Section 9.5 of the plan was assumed not to occur.
(5) Employer contributions beginning in fiscal year 2024 were modeled in a manner consistent with our understanding of the Board-adopted Funding Policy.

## Required Supplementary Information

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

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll;
- Comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy; and
- The annual money-weighted rate of return on pension plan investments for each year.

While the first two tables may be built prospectively as the information becomes available, sufficient information may currently be available for the third table from prior financial statements.

## Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. The net pension liability and pension expense should be measured as of the pension plan's fiscal year end (measurement date) on a date that is within the employer's prior fiscal year. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date. The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2021 and rolled-forward to the plan year end date of June 30, 2022.

# Discussion

## Notes to Financial Statements

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

Both GASB Statements No. 67 and No. 68 require the notes of the financial statements for the employers and pension plans to include certain additional information. The list of disclosure items should include:

- A description of the types of benefits provided by the plan, as well as automatic or ad hoc colas;
- The number and classes of employees covered by the benefit terms;
- For the current year, sources of changes in the net pension liability;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the Single Discount Rate;
- Certain information about mortality assumptions and the dates of experience studies;
- The date of the valuation used to determine the total pension liability;
- Information about changes of assumptions or other inputs and benefit terms;
- The basis for determining contributions to the plan, including a description of the plan's funding policy, as well as member and employer contribution requirements;
- The total pension liability, fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability;
- The net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- A description of the system that administers the pension plan; and
- A description of the terms of the plan's Deferred Retirement Option Program (DROP) and the total DROP balance for those members currently participating in the DROP. ***Current DROP balances for members of this plan are not available and are not included. These balances are also excluded from the reported assets.***

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

- The composition of the pension plan's Board and the authority under which benefit terms may be amended;
- The pension plan's investment policies;
- The portion of present value of benefits to be provided through the pension plan to current active and inactive plan members;
- A description of how fair value is determined; and
- 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.

# Discussion

## Limitation of Assets as a Percent of Total Pension Liability Measurements

This report includes a measure of the plan fiduciary net position as a percent of total pension liability (112.81% as of June 30, 2022). Unless otherwise indicated, with regard to any such measurements in this report:

(1) This measurement is not intended to be a funded ratio or a measure of funded progress.
(2) This measurement is inappropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations.
(3) The measurement is inappropriate for assessing the need for or amount of future employer contributions.

## Limitations of Project Scope

Actuarial Standards do not require the actuary to evaluate the ability of the Plan sponsor or other contributing entities to make required contributions when due. Such an evaluation was not within the scope of this project and is not within our area of expertise. Consequently, we have not made such an evaluation.

## Plan

The Police and Fire Retirement System has two components. It is our understanding that Component I and Component II are separate plans and that the assets from one plan cannot be used to satisfy the liabilities of the other, even though assets may be pooled for investment purposes. Therefore, this report only includes the liabilities and reported assets of Component I. The liabilities and reported assets of Component II will be detailed in a separate report.

# Discussion

## Comparisons to Funding Valuation

Because of a difference in the actuarial funding method used in the GASB valuations vs. funding valuation, as well as differences in the investment return assumption, it is possible that the June 30, 2022 funding valuation will show a lower funded status than this report.

## Development of TPL, Service Cost and PE

The TPL is the entry age accrued liability of the Defined Benefit plan plus the current Voluntary Member Contribution Reserve Fund (VMCRF). The service cost is the normal cost for the defined benefit portion plus voluntary member contributions made during the year. The Pension Expense (PE) is the service cost plus interest on the TPL plus adjustments for deferred inflows and outflows and "other" changes in Plan Fiduciary Net Position, less expected income on the Plan Fiduciary Net Position less member contributions. In this way, contributions to the VMCRF should not have an effect on the PE.

## Data

Please see the June 30, 2021 actuarial valuation, pages 29-30, for a discussion regarding data work, data assumptions, and data approximations used in the underlying valuation.

# SECTION B

## FINANCIAL STATEMENTS

This information is subject to the System's Auditor's review.  Please let us know if the System's Auditor recommends any changes.

# Statement of Fiduciary Net Position as of June 30, 2022

| | | |
|---|---|---|
| **Assets** | | |
| Cash and Cash Equivalents | $ | 31,339,347 |
| Receivables | $ | 9,443,582 |
| Investments | | |
| Investments at Fair Value | $ | 235,484,714 |
| Cash and Investments held as Collateral for Securities Lending | | 11,907,246 |
| Capital Assets - Net | | 3,425,327 |
| Total Investments | $ | 250,817,287 |
| **Total Assets** | $ | 291,600,216 |
| **Liabilities** | | |
| Payables | | |
| Accounts Payable | $ | 16,009,793 |
| **Total Liabilities** | $ | 16,009,793 |
| **Total Fund Balances** | $ | 275,590,423 |

| | | |
|---|---|---|
| **Reported Reserve Balances** | | |
| Accumulated Voluntary Employee Contribution | $ | 2,808,182 |
| Accumulated Mandatory Employee Contribution | | 70,564,978 |
| Rate Stabilization | | 5,649,557 |
| Pension Accumulation | | 196,567,706 |
| **Total Fund** | $ | 275,590,423 |

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

| | | |
|---|---|---|
| **Additions** | | |
| Contributions | | |
| Employer | $ | 20,055,026 |
| Mandatory Member Pension Fund Contributions | | 11,314,603 |
| Transfer from Component II | | - |
| Voluntary Member Contributions | | 379,146 |
| Total Contributions | $ | 31,748,775 |
| Investment Income | | |
| Net Appreciation in Fair Value of Investments | $ | (4,130,996) |
| Investment Income | | - |
| Less Investment Expense | | - |
| Net Investment Income | $ | (4,130,996) |
| Other including Rate Stabilization | $ | 18,700 |
| **Total Additions** | $ | 27,636,479 |
| **Deductions** | | |
| Benefit Payments, including Refunds of Employee Contributions | $ | 8,690,005 |
| Pension Plan Administrative Expense | | 1,850,154 |
| Other | | - |
| **Total Deductions** | $ | 10,540,159 |
| **Net Increase in Net Position** | $ | 17,096,320 |
| Total Fund Balances Beginning of Year | $ | 258,494,103 |
| Total Fund Balances End of Year | $ | 275,590,423 |
| Estimated Market Rate of Return* | | -1.5% |

**Net of investment expenses.*

# Statement of Pension Expense under
# GASB Statement No. 68
# Fiscal Year Ended June 30, 2022

| | | |
|---|---|---|
| **A. Expense** | | |
| 1. Service Cost * | $ | 31,692,762 |
| 2. Interest on the Total Pension Liability | | 13,848,191 |
| 3. Current-Period Benefit Changes | | (879,115) |
| 4. Employee Contributions (made negative for addition here)* | | (11,693,749) |
| 5. Projected Earnings on Plan Investments (made negative for addition here) | | (18,514,614) |
| 6. Pension Plan Administrative Expense | | 1,850,154 |
| 7. Other Changes in Plan Fiduciary Net Position | | (18,700) |
| 8. Recognition of Outflow (Inflow) of Resources due to Liabilities | | (347,707) |
| 9. Recognition of Outflow (Inflow) of Resources due to Assets | | 138,213 |
| **10. Total Pension Expense** | **$** | **16,075,435** |

* *Voluntary employee contributions made during the year are added to the service cost and included in the employee contribution total.*

# Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 2022

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

| | | |
|---|---|---|
| 1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses | $ | 26,669,076 |
| 2. Assumption Changes (gains) or losses | $ | (8,591,674) |
| 3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years} | | 7.7898 |
| 4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability | $ | 3,423,589 |
| 5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes | $ | (1,102,939) |
| 6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities | $ | 2,320,650 |
| 7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability | $ | 23,245,487 |
| 8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes | $ | (7,488,735) |
| 9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities | $ | 15,756,752 |

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

| | | |
|---|---|---|
| 1. Net difference between projected and actual earnings on pension plan investments (gains) or losses | $ | 22,645,610 |
| 2. Recognition period for Assets {in years} | | 5.0000 |
| 3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets | $ | 4,529,122 |
| 4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets | $ | 18,116,488 |

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

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

| | Outflows of Resources | Inflows of Resources | Net Outflows of Resources |
|---|---|---|---|
| 1. Due to Liabilities | $ 4,822,536 | $ 5,170,243 | $ (347,707) |
| 2. Due to Assets | 7,663,395 | 7,525,182 | 138,213 |
| **3. Total** | $ 12,485,931 | $ 12,695,425 | $ (209,494) |

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

| | Outflows of Resources | Inflows of Resources | Net Outflows of Resources |
|---|---|---|---|
| 1. Differences between expected and actual experience | $ 3,423,589 | $ 3,891,791 | $ (468,202) |
| 2. Assumption Changes | 1,398,947 | 1,278,452 | 120,495 |
| 3. Net Difference between projected and actual earnings on pension plan investments | 7,663,395 | 7,525,182 | 138,213 |
| **4. Total** | $ 12,485,931 | $ 12,695,425 | $ (209,494) |

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

| | Deferred Outflows of Resources | Deferred Inflows of Resources | Net Deferred Outflows of Resources |
|---|---|---|---|
| 1. Differences between expected and actual experience | $ 23,245,487 | $ 15,209,414 | $ 8,036,073 |
| 2. Assumption Changes | 7,463,322 | 7,782,016 | (318,694) |
| 3. Net Difference between projected and actual earnings on pension plan investments | 23,437,600 | 21,969,869 | 1,467,731 |
| **4. Total** | $ 54,146,409 | $ 44,961,299 | $ 9,185,110 |

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

| Year Ending June 30 | Net Deferred Outflows of Resources |
|---|---|
| 2023 | $ (5,423) |
| 2024 | (734,269) |
| 2025 | (1,747,297) |
| 2026 | 6,091,678 |
| 2027 | 1,849,403 |
| Thereafter | 3,731,018 |
| **Total** | $ 9,185,110 |

# Recognition of Deferred Outflows and Inflows of Resources
# Fiscal Year Ended June 30, 2022

| Year Established | Initial Amount | Initial Recognition Period | Current Year Recognition | Remaining Recognition | Remaining Recognition Period |
|---|---|---|---|---|---|
| **Deferred Outflow (Inflow) due to Differences Between Expected and Actual Experience on Liabilities** | | | | | |
| 2015 | $ - | 8.9806 | $ - | $ - | 0.9806 |
| 2016 | (4,077,124) | 8.4456 | (482,751) | (697,867) | 1.4456 |
| 2017 | (10,708,737) | 8.1862 | (1,308,145) | (2,859,867) | 2.1862 |
| 2018 | (3,622,053) | 8.4269 | (429,820) | (1,472,953) | 3.4269 |
| 2019 | (3,122,804) | 8.7536 | (356,745) | (1,695,824) | 4.7536 |
| 2020 | (62,923) | 8.3705 | (7,517) | (40,372) | 5.3705 |
| 2021 | (11,056,157) | 8.4604 | (1,306,813) | (8,442,531) | 6.4604 |
| 2022 | 26,669,076 | 7.7898 | 3,423,589 | 23,245,487 | 6.7898 |
| **Total** | | | **$ (468,202)** | **$ 8,036,073** | |
| **Deferred Outflow (Inflow) due to Assumption Changes** | | | | | |
| 2015 | $ (1,008,119) | 8.9806 | $ (112,255) | $ (110,079) | 0.9806 |
| 2016 | 2,424,058 | 8.4456 | 287,020 | 414,918 | 1.4456 |
| 2017 | (221,533) | 8.1862 | (27,062) | (59,161) | 2.1862 |
| 2018 | (305,021) | 8.4269 | (36,196) | (124,041) | 3.4269 |
| 2019 | - | 8.7536 | - | - | 4.7536 |
| 2020 | 1,037,498 | 8.3705 | 123,947 | 665,657 | 5.3705 |
| 2021 | 8,358,707 | 8.4604 | 987,980 | 6,382,747 | 6.4604 |
| 2022 | (8,591,674) | 7.7898 | (1,102,939) | (7,488,735) | 6.7898 |
| **Total** | | | **$ 120,495** | **$ (318,694)** | |
| **Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments** | | | | | |
| 2015 | $ 746,013 | 5.0000 | $ - | $ - | 0.0000 |
| 2016 | 2,114,337 | 5.0000 | - | - | 0.0000 |
| 2017 | (4,366,764) | 5.0000 | - | - | 0.0000 |
| 2018 | (1,009,457) | 5.0000 | (201,893) | - | 0.0000 |
| 2019 | 4,737,182 | 5.0000 | 947,436 | 947,438 | 1.0000 |
| 2020 | 10,934,185 | 5.0000 | 2,186,837 | 4,373,674 | 2.0000 |
| 2021 | (36,616,447) | 5.0000 | (7,323,289) | (21,969,869) | 3.0000 |
| 2022 | 22,645,610 | 5.0000 | 4,529,122 | 18,116,488 | 4.0000 |
| **Total** | | | **$ 138,213** | **$ 1,467,731** | |

# SECTION C

## REQUIRED SUPPLEMENTARY INFORMATION

This information is subject to the System's Auditor's review.  Please let us know if the System's Auditor recommends any changes.

# Schedule of Changes in Net Pension Liability (Asset) and Related Ratios Current Period Fiscal Year Ended June 30, 2022

| | | |
|---|---|---|
| **A. Total Pension Liability** | | |
| 1. Service cost | | |
| 1a. Normal Cost | $ | 31,313,616 |
| 1b. Voluntary Employee Contributions | | 379,146 |
| 1c. Service Cost (Total) | $ | 31,692,762 |
| 2. Interest on the Total Pension Liability | | 13,848,191 |
| 3. Changes of benefit terms | | (879,115) |
| 4. Difference between expected and actual experience of the Total Pension Liability | | 26,669,076 |
| 5. Changes of assumptions | | (8,591,674) |
| 6. Benefit payments, including refunds of employee contributions | | (8,690,005) |
| 7. Net change in Total Pension Liability | $ | 54,049,235 |
| 8. Total Pension Liability – Beginning | | 190,254,435 |
| 9. Total Pension Liability – Ending | **$** | **244,303,670** |
| **B. Plan Fiduciary Net Position** | | |
| 1. Contributions – Employer | $ | 20,055,026 |
| 2. Contributions – Employee | | 11,693,749 |
| 3. Net investment income | | (4,130,996) |
| 4. Benefit payments, including refunds of employee contributions | | (8,690,005) |
| 5. Pension plan administrative expense | | (1,850,154) |
| 6. Other | | 18,700 |
| 7. Net change in Plan Fiduciary Net Position | $ | 17,096,320 |
| 8. Plan Fiduciary Net Position – Beginning | | 258,494,103 |
| 9. Plan Fiduciary Net Position – Ending | **$** | **275,590,423** |
| **C. Net Pension Liability** | **$** | **(31,286,753)** |
| **D. Plan Fiduciary Net Position as a percentage of the Total Pension Liability** | | **112.81%** |
| **E. Covered-Employee Payroll** | **$** | **158,718,175** |
| **F. Net Pension Liability as a percentage of Covered-Employee Payroll** | | **(19.71)%** |

A Special Funding Situation may occur if a non-city entity has a legal obligation to contribute directly to the Retirement System. The Net Pension Liability (Asset) shown here has not been adjusted for any potential special funding situation.

# Schedules of Required Supplementary Information

## Schedule of Changes in Net Pension Liability (Asset) and Related Ratios Multiyear

**Ultimately 10 Fiscal Years Will Be Displayed**

| Fiscal year ending June 30, | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 |
|---|---|---|---|---|---|---|---|---|
| **Total Pension Liability** | | | | | | | | |
| Service Cost | | | | | | | | |
| 1a. Normal Cost | $ 31,313,616 | $ 29,728,185 | $ 28,748,296 | $ 26,663,624 | $ 24,811,302 | $ 25,401,685 | $ 24,068,808 | $ 24,835,814 |
| 1b. Voluntary Employee Contributions | 379,146 | 387,694 | 439,745 | 278,811 | 96,205 | 46,631 | 15,459 | 14,370 |
| 1c. Service Cost (Total) | $ 31,692,762 | $ 30,115,879 | $ 29,188,041 | $ 26,942,435 | $ 24,907,507 | $ 25,448,316 | $ 24,084,267 | $ 24,850,184 |
| Interest on the Total Pension Liability (and Service Cost) | 13,848,191 | 12,024,766 | 9,617,240 | 7,633,137 | 5,787,404 | 4,474,574 | 2,743,066 | 894,089 |
| Benefit Changes | (879,115) | - | (748,011) | (518,835) | - | - | - | - |
| Difference between Expected and Actual Experience | 26,669,076 | (11,056,157) | (62,923) | (3,122,804) | (3,622,053) | (10,708,737) | (4,077,124) | - |
| Assumption Changes | (8,591,674) | 8,358,707 | 1,037,498 | - | (305,021) | (221,533) | 2,424,058 | (1,008,119) |
| Benefit Payments | (7,175,873) | (4,530,674) | (4,361,603) | (3,617,625) | (345,297) | (137,325) | (63,883) | - |
| Refunds | (1,514,132) | (687,698) | (345,445) | (395,733) | (216,264) | (86,501) | (37,368) | - |
| **Net Change in Total Pension Liability** | 54,049,235 | 34,224,823 | 34,324,797 | 26,920,575 | 26,206,276 | 18,768,794 | 25,073,016 | 24,736,154 |
| **Total Pension Liability - Beginning** | 190,254,435 | 156,029,612 | 121,704,815 | 94,784,240 | 68,577,964 | 49,809,170 | 24,736,154 | - |
| **Total Pension Liability - Ending (a)** | $ 244,303,670 | $ 190,254,435 | $ 156,029,612 | $ 121,704,815 | $ 94,784,240 | $ 68,577,964 | $ 49,809,170 | $ 24,736,154 |
| **Plan Fiduciary Net Position** | | | | | | | | |
| Employer Contributions | $ 20,055,026 | $ 19,209,594 | $ 18,028,236 | $ 17,832,015 | $ 19,244,806 | $ 16,448,246 | $ 15,955,915 | $ 14,606,971 |
| Employee Contributions | 11,314,603 | 10,691,537 | 9,926,428 | 9,489,473 | 9,074,671 | 8,554,893 | 7,834,119 | 7,390,335 |
| Voluntary Employee Contributions | 379,146 | 387,694 | 439,745 | 278,811 | 96,205 | 34,134 | 15,459 | 14,370 |
| Pension Plan Net Investment Income | (4,130,996) | 50,627,589 | 1,348,929 | 5,384,693 | 8,634,498 | 8,897,790 | 252,125 | 21,019 |
| Benefit Payments | (7,175,873) | (4,530,674) | (4,361,603) | (3,617,625) | (345,297) | (137,325) | (63,883) | (19,554) |
| Refunds | (1,514,132) | (687,698) | (345,445) | (395,733) | (216,264) | (86,501) | (37,368) | - |
| Pension Plan Administrative Expense | (1,850,154) | (1,305,317) | (1,619,042) | (2,017,961) | (1,928,606) | (2,648,040) | (3,000,369) | (685,677) |
| Other | 18,700 | 47,840 | 1,668,745 | 4,042,486 | 55,353 | 20,009,060 | 301 | - |
| **Net Change in Plan Fiduciary Net Position** | 17,096,320 | 74,440,565 | 25,085,993 | 30,996,159 | 34,615,366 | 51,072,257 | 20,956,299 | 21,327,464 |
| **Plan Fiduciary Net Position - Beginning** | 258,494,103 | 184,053,538 | 158,967,545 | 127,971,386 | 93,356,020 | 42,283,763 | 21,327,464 | - |
| **Plan Fiduciary Net Position - Ending (b)** | $ 275,590,423 | $ 258,494,103 | $ 184,053,538 | $ 158,967,545 | $127,971,386 | $ 93,356,020 | $ 42,283,763 | $ 21,327,464 |
| **Net Pension Liability (Asset) - Ending (a) - (b)** | (31,286,753) | (68,239,668) | (28,023,926) | (37,262,730) | (33,187,146) | (24,778,056) | 7,525,407 | 3,408,690 |
| **Plan Fiduciary Net Position as a Percentage of Total Pension Liability** | 112.81 % | 135.87 % | 117.96 % | 130.62 % | 135.01 % | 136.13 % | 84.89 % | 86.22 % |
| **Covered-Employee Payroll (excluding DROP)** | $ 158,718,175 | $ 153,055,458 | $ 150,041,943 | $ 146,689,948 | $141,225,328 | $ 128,837,649 | $ 131,695,469 | $ 132,566,687 |
| **Net Pension Liability (Asset) as a Percentage of Covered-Employee Payroll** | (19.71)% | (44.58)% | (18.68)% | (25.40)% | (23.50)% | (19.23)% | 5.71 % | 2.57 % |
| **Notes to Schedule:** | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

A special funding situation may occur if a non-city entity has a legal obligation to contribute directly to the Retirement System. The Net Pension Liability (Asset) shown here has not been adjusted for any potential special funding situation.

# Schedules of Required Supplementary Information
# Schedule of the Net Pension Liability (Asset) Multiyear

### Ultimately 10 Fiscal Years Will Be Displayed

| FY Ending June 30, | Total Pension Liability | Plan Net Position | Net Pension Liability (Asset) | Plan Net Position as a % of Total Pension Liability | Covered Payroll* | Net Pension Liability (Asset) as a % of Covered Payroll |
|---|---|---|---|---|---|---|
| 2015 | $ 24,736,154 | $ 21,327,464 | $ 3,408,690 | 86.22% | $ 132,566,687 | 2.57% |
| 2016 | 49,809,170 | 42,283,763 | 7,525,407 | 84.89% | 131,695,469 | 5.71% |
| 2017 | 68,577,964 | 93,356,020 | (24,778,056) | 136.13% | 128,837,649 | -19.23% |
| 2018 | 94,784,240 | 127,971,386 | (33,187,146) | 135.01% | 141,225,328 | -23.50% |
| 2019 | 121,704,815 | 158,967,545 | (37,262,730) | 130.62% | 146,689,948 | (25.40)% |
| 2020 | 156,029,612 | 184,053,538 | (28,023,926) | 117.96% | 150,041,943 | (18.68)% |
| 2021 | 190,254,435 | 258,494,103 | (68,239,668) | 135.87% | 153,055,458 | (44.58)% |
| 2022 | 244,303,670 | 275,590,423 | (31,286,753) | 112.81% | 158,718,175 | (19.71)% |

* *Covered payroll shown is the reported payroll from the actuarial valuation date (census date). For 2015, covered payroll was based on payroll reported for Component II. Beginning in 2016, covered payroll was based on payroll reported for Component I. Excludes DROP payroll.*

# Schedule of Contributions Multiyear

| FY Ending June 30, | Actuarially Determined Contribution[#] | Actual Contribution | Contribution Deficiency (Excess) | Covered Payroll* | Actual Contribution as a % of Covered Payroll |
|---|---|---|---|---|---|
| 2015 | N/A | $ 14,606,971 | N/A | $ 132,566,687 | 11.02% |
| 2016 | N/A | 15,831,763 | N/A | 131,695,469 | 12.02% |
| 2017 | N/A | 16,448,246 | N/A | 128,837,649 | 12.77% |
| 2018 | N/A | 19,244,806 | N/A | 141,225,328 | 13.63% |
| 2019 | N/A | 17,832,015 | N/A | 146,689,948 | 12.16% |
| 2020 | N/A | 18,028,236 | N/A | 150,041,943 | 12.02% |
| 2021 | N/A | 19,209,594 | N/A | 153,055,458 | 12.55% |
| 2022 | N/A | 20,055,026 | N/A | 158,718,175 | 12.64% |

* *Covered payroll shown is the reported payroll from the actuarial valuation date (census date). For 2015, covered payroll was based on payroll reported for Component II. Beginning in 2016, covered payroll was based on payroll reported for Component I. Excludes DROP payroll.*

[#] *Employer contribution amounts are set forth in the Plan of Adjustment until Fiscal Year 2024.*

# Notes to Schedule of Contributions

**Employer Contribution:** 12.25% until FY 2024. Actuarially determined beginning in FY 2024.

# Schedule of Investment Returns

This information should be provided by the plan's investment consultant.

# Rate Stabilization Fund (RSF)

The RSF, as defined in Section 9.2(4) of the Combined PFRS Plan, is currently $5,649,557, as of June 30, 2022.

# SECTION D

## NOTES TO FINANCIAL STATEMENTS

This information is subject to the System's Auditor's review.  Please let us know if the System's Auditor recommends any changes.

# Single Discount Rate

A Single Discount Rate of 6.93% was used to measure the total pension liability as of June 30, 2022. This Single Discount Rate was based on the expected rate of return on pension plan investments of 6.93% as directed by the System and the System's Auditor. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at 6% of compensation for members hired before June 30, 2014 and 8% for members hired after June 30, 2014 and that employer contributions will be made at 12.25% of compensation through June 30, 2023. Beyond 2023, the employer contributions will be actuarially determined and the projected contributions starting in Fiscal Year 2024 reflect our understanding of the Funding Policy adopted by the Board. The funding policy the Board has adopted results in a Single Discount Rate of 6.93%.

The actual contributions to this plan will be on open group payroll under different assumptions and methods and are expected to be at a lower rate. The contributions that result from applying the current funding approach to the methods required under GASB Statement Nos. 67 and 68 should not be interpreted as a funding recommendation or requirement. Different contributions will result when applying the same funding approach to the methods and assumptions used in the funding valuation. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the Net Pension Liability (Asset) (NPL(A)) to changes in the Single Discount Rate, the following presents the plan's NPL(A), calculated using a Single Discount Rate of 6.93%, as well as what the plan's NPL(A) would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher.

## Sensitivity of Net Pension Liability (Asset) to the Single Discount Rate Assumption

| | 1% Decrease 5.93% | Current Single Discount Rate Assumption 6.93% | 1% Increase 7.93% |
|---|---|---|---|
| Total Pension Liability | $287,518,676 | $244,303,670 | $209,768,486 |
| Net Position Restricted for Pensions | 275,590,423 | 275,590,423 | 275,590,423 |
| Net Pension Liability (Asset) | $ 11,928,253 | $(31,286,753) | $(65,821,937) |

## Expected Real Returns by Asset Class

This information should be provided by the plan's investment consultant.

## Summary of Population Statistics

| | |
|---|---|
| Inactive Plan Members or Beneficiaries Currently Receiving Benefits | 184 |
| DROP Members | 111 |
| Legacy Disabled | 85 |
| Inactive Plan Members Entitled to But Not Yet Receiving Benefits | 761 |
| Active Plan Members | 2,551 |
| Total Plan Members | 3,692 |

Additional information regarding the plan population may be found in the June 30, 2021 actuarial valuation of the System.

## Additional Note

Liabilities and reported assets for Component II are not included in this report and will be detailed in a separate report.

The Total Pension Liability is sensitive to the assumption regarding the VPIF. The sensitivity may increase as the plan matures. To illustrate the sensitivity, we are showing the Total Pension Liability below based on two alternate VPIF assumptions: 0% and 0.5% (the mid-point between the minimum and maximum assumption). All scenarios are based on a 6.93% discount rate.

## VPIF Assumption

| | **Minimum** | **Mid-Point Assumption** | **Current Assumption** |
|---|---|---|---|
| | **0%** | **0.5%** | **1.0%** |
| Total Pension Liability | $220,206,489 | $231,751,466 | $244,303,670 |
| Net Position Restricted for Pensions | 275,590,423 | 275,590,423 | 275,590,423 |
| Net Pension Liability (Asset) | $(55,383,934) | $(43,838,957) | $(31,286,753) |

# Section E

## Summary of Benefits

# Summary of Benefit Provisions
# (June 30, 2022)

## Plan Year

***The Plan Year*** is the 12-month period commencing on July 1, and ending on June 30. The first plan year starts July 1, 2014.

## Plan Membership

***Employee*** means an employee of the City's Police Department who has taken an oath of office or a Firefighter providing services to the City, excluding individuals who are compensated on a contractual or fee basis, any person who is classified as a non-common law employee or an independent contractor for federal income tax and withholding, and also excluding the Medical Director of the Retirement System.

***The membership*** of the Retirement System shall consist of all employees of the Fire Department of the City of Detroit and of the Police Department of the City of Detroit who are employed as Firefighters or Police Officers according to the rules and regulations of the respective departments.

**Appointed Officials** of the Police Department or the Fire Department who are appointed from the membership are permitted to remain members. A Police Officer or Firefighter who is **killed or totally disabled prior to being confirmed**, shall be deemed to have been a member as of the date of his or her death. Any Member who is **transferred to a civilian position** in his or her department shall continue as a member.

## Service Credit

***Credited Service:*** A member is credited with one month of Credited Service for each calendar month in which the individual performs 140 hours or more of service for the employer as a member. Credited Service is recorded from the later of July 1, 2014, or the date of employment with the City as a Police Officer or Firefighter. A member also receives one month of Credited Service for each month the member is eligible to receive duty disability benefits, until such time as the member has 25 years of credited service.

***Prior Service:*** refers to service credit awarded to a member prior to July 1, 2014 under the terms of the Retirement System in effect on June 30, 2014.

***Vesting Service:*** A member is credited with a year of vesting service for each Plan Year commencing on or after July 1, 2014 during which the member performs 1,000 or more hours of work for the employer. Prior Service, as defined above, is also Vesting Service.

***Military Service:*** A member who enters the military while employed by the City and returns to employment with the City following military service receives service credit in the Retirement System for the military service time as though there had been no interruption of employment. In order to receive such service credit, the individual must pay contributions to the Retirement System for the military service time upon return to employment.

# Summary of Benefit Provisions
# (Continued)

## Average Final Compensation

***Compensation:*** Compensation is base salary, excluding bonuses, overtime, sick leave, longevity pay, unused vacation time, etc. Compensation includes deferred compensation and "picked up" employee contributions to the Retirement System. Compensation is limited by IRC Section 401(a)(17).

***Average Final Compensation:*** The average of the compensation received during the 5 consecutive years of Credited Service (including Prior Service) immediately preceding the date of the member's last termination of City employment as a Police Officer or Firefighter. If the member has less than 5 years of Credited Service (including Prior Service), the Average Final Compensation is the average of the compensation received during all years of Credited Service.

***Final Compensation*** means the annual compensation of a member at the time of last termination of employment.

## Normal Retirement

***Normal Retirement Age:*** The Normal Retirement Age is 50 with 25 or more years of Credited Service (including prior service), with the following transition period.

| Fiscal Year | Age and Eligibility Service |
|---|---|
| 2015 | 43 and 20 |
| 2016 | 43 and 20 |
| 2017 | 44 and 21 |
| 2018 | 45 and 22 |
| 2019 | 46 and 23 |
| 2020 | 47 and 24 |
| 2021 and later | 50 and 25 |

***Normal Retirement Amount:*** The retirement allowance payable to a member who retires on or after the normal retirement age is 2.0% times average final compensation times Credited Service (after June 30, 2014) measured to the nearest month.

## Deferred Retirement (Vested Benefit)

***Eligibility:*** 10 years of Vesting Service.

***Benefit Commencement:*** Age 55.

***Annual Amount:*** Same as Normal Retirement but based on Average Final Compensation and Credited Service at the time of termination. An actuarial reduction from age 62 is applicable if benefits are taken prior to age 62 (*waived for DPLSA and DPCOA members*).

# Summary of Benefit Provisions (Continued)

## Duty Disability Retirement

***Eligibility:*** The individual must be totally disabled for duty by reason of illness, injury, or disease resulting from performance of duty.

***Amount:*** For the first 24 months, the member shall receive a basic benefit equal to 50% of his or her final compensation plus a supplemental benefit equal to 16-2/3 % of final compensation. After 24 months, if the Board finds that the member is disabled from any occupation, the member shall continue to receive both the 50% and the 16-2/3% benefit until the member would have achieved 25 years of service. The 16-2/3% benefit ceases at the time the member would have had 25 years of service, or if the member is found not to be disabled from any occupation after the 24 month review. Duty disability benefits continue to be paid until age 65, unless the member is found not to be disabled prior to that date. Upon termination of disability, or the attainment of age 65, the member's benefit is reduced to the 50% basic benefit. Earned Income in any year acts to reduce the disability benefit in the following year, to the extent that earned income combined with the disability benefit exceeds the compensation at the time of disability (after adjustment for the Variable Improvement factor). Amounts payable from Worker's Comp or similar programs are offset against the amount otherwise payable.

## Non-Duty Disability Retirement

***Eligibility:*** Total and permanent disability that is not duty related but that occurred while in the employ of the City.

***Amount:*** If the member has less than 5 years of Credited service, accumulated contributions are refunded or, at the members option, may be payable in the form of a cash refund annuity. No other benefits are payable. Members with 5 or more years of credited service at the time of disability may receive a benefit computed as a Normal Retirement benefit, but not less than 20% of Average Final Compensation. Earned Income in any year acts to reduce the disability benefit in the following year, to the extent that earned income combined with the disability benefit (after adjustment for the Variable Improvement factor) exceeds the compensation at the time of disability. Amounts payable from Worker's Comp or similar programs are offset against the amount otherwise payable.

# Summary of Benefit Provisions (Continued)

## Accidental (Line of Duty) Death Before Retirement

***Eligibility:*** Death resulting directly from performance of Duty in the service of the employer or as a result of illness contracted or injuries received while in the service of the employer.

***Amount:*** Accumulated Mandatory Employee Contributions are refunded. If there is a surviving spouse, the surviving spouse receives a lifetime pension of 5/11$^{ths}$ of the member's final compensation. Each surviving child under age 18 receives a pension of 1/10$^{th}$ of final compensation payable until age 18. If there are more than two surviving children, each receives an equal share of 7/33$^{rds}$ of final compensation, payable to age 18 and redistributed to the remaining children upon attainment of age 18. The sum of all benefits payable shall not exceed 2/3$^{rds}$ of the member's Final Compensation. If there is no surviving spouse, each surviving child under age 18 receives a pension of 1/4$^{th}$ of the member's final compensation, subject to a maximum total of ½ of final compensation. If there is neither surviving spouse nor surviving children under the age of 18, each dependent parent, if any, shall receive a pension of 1/6$^{th}$ of the member's Final Compensation.

## Ordinary (Other than Line of Duty) Death Before Retirement

***Eligibility:*** 10 or more years of Vesting Service. The individual must be employed by the employer at time of death.

***Amount:*** The Surviving Spouse shall receive a retirement allowance computed as though the member had retired the day before death, notwithstanding that the death was prior to the Normal Retirement Date, elected the Joint and 100% Option in favor of the spouse, and then died.

## Refund of Mandatory Contributions

A member who ceases to be an employee for reasons other than retirement, death, or disability, may elect to receive a refund of mandatory Accumulated Contributions (without interest) in lieu of any other Component I benefit payable. In the case of a member who dies while employed by the City, or following termination of employment with the City, if no Surviving Spouse benefit is payable, the accumulated mandatory Employee Contributions (without interest) are paid to the member's estate.

## Variable Pension Improvement Factor (VPIF Escalator)

***Eligibility:*** In receipt of a retirement allowance for at least 12 months as of the first day of the plan year.

***Amount:*** Beginning July 1, 2015 and effective the first date of each Plan year thereafter, the Board may determine that the Component I Retirement Allowance shall be increased by 1% of the then current (i.e., compounded to include prior VPIF's) retirement allowance. The VPIF Escalator may not be awarded in the event that the funding level of Component I of the Retirement System projected over a 5-year period falls below 90%.

# Summary of Benefit Provisions (Continued)

## Deferred Retirement Option Program "DROP"

***Eligibility:*** Eligible for immediate retirement under Component I and either a non-union executive or covered by a collective bargaining agreement permitting participation in the DROP. Members electing DROP after July 1, 2014 are limited to 5 years of DROP participation. Effective October 31, 2018, DPLSA and DPCOA members are limited to 10 years of DROP participation. Effective May 9, 2019, DPOA members are limited to 10 years of DROP participation. Effective September 21, 2021, DPLSA members are limited to 15 years of DROP participation.

***Amount:*** Upon entry into the DROP, the member ceases to accrue additional retirement benefits and must elect the optional form under which the retirement allowance will ultimately be paid. 75% of that amount, including VPIF, is paid into the DROP account.

***Investment:*** ING is currently responsible for the administration and investment of the DROP accounts. As soon as possible after July 1, 2014, the Board shall determine whether or not it is feasible for the Board to administer and invest the DROP accounts, in which case DROP assets would be commingled with Retirement System assets for investment purposes.

***Earnings Credits:*** If the Board administers and invests the accounts, earnings credits shall be 75% of actual net Retirement System earnings rates, but neither less than 0% nor more than 7.75%.

***Fees:*** Fees associated with maintenance of the DROP accounts outside the Retirement System shall be charged directly to DROP participants by means of deductions from their accounts.

***Distribution:*** Upon termination of employment for any reason (including disability), the member's DROP account may be distributed in the form of a lump sum or an annuity. Any such annuity shall be subject to market rates of interest and other market related assumptions. At the same time, the member's monthly retirement allowance shall commence in the amount that would have been paid at the time the member entered the DROP, together with any applicable VPIF increases.

***Death While in DROP:*** In the case of a member who dies during DROP participation, the DROP account balance is paid either to the named beneficiary or to the estate. Further, the DROP election is then rescinded and 100% of the retirement allowance that would have been paid but for participation in the DROP is restored. Survivor benefits are then payable in accordance with the payment option elected by the deceased member at the time the member elected to participate in the DROP.

***Termination of DROP:*** The DROP can be terminated if it is determined that it is not cost neutral and cannot be amended to make it so.

## Contributions

***Members:*** Members who were active as of June 30, 2014 contribute 6% of Compensation. Members who are hired or rehired after that date contribute 8% of compensation. DROP participants do not make employee contributions. Member contributions are "picked up" in accordance with IRC 414(h).

# Summary of Benefit Provisions
# (Continued)

***Employers:*** 11.2% of compensation for members of the DPOA until October 3, 2014; 11.2% of Compensation of active employees who are members of the DFFA until November 6, 2014; 12.25% of Compensation of Active employees who are members of the DPCOA, DPLSA, and DPOA from and after October 3, 2014 until June 30, 2023; 12.25% of Compensation of DFFA members from and after November 6, 2014 until June 30, 2023, to be split between the Pension Accumulation Fund and the Rate Stabilization reserve. For Plan years 2024 and later, contributions shall be determined by an Actuary using reasonable and appropriate assumptions approved by the Board and the Investment Committee.

## Voluntary Employee Contributions

***Eligibility:*** Coverage by a collective bargaining agreement that permits the Member to make Voluntary Employee Contributions to Component I cannot be a current participant in the DROP.

***Amount:*** Not less than 1% of Compensation nor more than 10% of Compensation. DPOA members can elect to have a whole % of the amount the City pays him or her for accumulated sick leave in excess of 400 hours paid to the voluntary employee account. All voluntary employee contributions are made on an after tax basis.

***Earnings Crediting:*** Each Plan year, accounts are credited with earnings at a rate equal to the net investment rate of return on Retirement System Assets for the second fiscal year immediately preceding the fiscal year in which earnings are to be credited. The earnings rate may not be less than 0% and may not exceed 5.25%.

***Distribution:*** Upon termination of employment, accounts may be distributed in a lump sum, in equal monthly installments for a period not exceeding three years, or, at the option of the member, in the form of an actuarially equivalent life annuity payable in the same form as and added to the member's Retirement Allowance. The determination of actuarial equivalent for this purpose is based upon market rates of investment return and other market related assumptions. In case of a member who dies before receiving a distribution of his or her voluntary account, the value of the account is payable to the nominated beneficiary, or to the estate.

## Forms of Payment

***Normal Form of Payment:*** The normal form of payment is a straight life allowance with no death benefit, and, in particular, no residual refund of mandatory employee contributions. Until the date the first Retirement Allowance payment check is issued, any Member may elect to receive payment in either the Normal Form or in the Actuarial Equivalent of the Normal Form computed as of the effective date of retirement and payable in one of the forms described below.

***Option One. Modified Cash Refund Annuity:*** If a Retiree who elected a Modified Cash Refund Annuity dies before payment has been received in an aggregate amount equal to, but not exceeding the Retiree's Accumulated Mandatory Employee Contributions at the time of retirement, the difference between said Accumulated Mandatory Employee Contributions and the aggregate amount of annuity payments already received, shall be paid in a single lump sum to a Beneficiary nominated by written designation duly executed by the Member and filed with the Board. If there are no such designated Beneficiaries surviving said Retiree, any such difference shall be paid to the Retiree's estate.

# Summary of Benefit Provisions (Continued)

***Option Two. Joint and One Hundred Percent Survivor Allowance:*** Upon the death of a Retiree who elected a Joint and One Hundred Percent Survivor Allowance, one hundred percent of the reduced Retirement Allowance shall be paid to and continued throughout the life of the Beneficiary nominated by written designation duly executed and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

***Option "A". Joint and Seventy-Five Percent Survivor Allowance:*** Upon the death of a Retiree who elected a Joint and Seventy-Five Percent Survivor Allowance, seventy-five percent of the reduced Retirement Allowance shall be continued throughout the life of and paid to the Beneficiary nominated by written designation duly executed by the Member and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

***Option Three. Joint and Fifty Percent Survivor Allowance:*** Upon the death of a Retiree who elected a Joint and Fifty Percent Survivor Allowance, fifty percent of the reduced Retirement Allowance shall be continued throughout the life of and paid to the Beneficiary nominated by written designation duly executed by the Member and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

***Option "B". Joint and Twenty-Five Percent Survivor Allowance:*** Upon the death of a Retiree who elected a Joint and Twenty-Five Percent Survivor Allowance, twenty-five percent of the reduced Retirement Allowance shall be paid throughout the life of the Beneficiary nominated by written designation duly executed and filed with the Board prior to the date the first payment of the Retirement Allowance becomes due.

***Joint and Survivor Optional Forms of Payment:*** The Joint and Survivor Optional Forms of Payment provided under the Retirement System shall be made available in either the standard form or the pop-up form, as follows:

> ***Standard Form:*** Under the Standard Form, the reduced Retirement Allowance shall be paid throughout the lifetime of the Retiree.
>
> ***Pop-up Form:*** Under the Pop-up Form, the reduced Retirement Allowance shall be paid throughout the lifetime of the Retiree and the designated Beneficiary. In the event of the death of the designated Beneficiary during the lifetime of the Retiree, the amount of the Retirement Allowance shall be changed to the amount that would have been payable had the Retiree elected the Straight Life Retirement Allowance Form of Payment.

***Disposition of Residue:*** If under a Joint and One Hundred Percent Survivor allowance, a Joint and Seventy-Five Percent Survivor allowance, a Joint and Fifty Percent Survivor allowance, or a Joint and Twenty-Five Percent Survivor allowance as provided above, both the Retiree and the Beneficiary die before they have received, in Retirement Allowance payments, an aggregate amount equal to the Retiree's Accumulated Mandatory Employee Contributions at the time of retirement, the difference between the said Accumulated Mandatory Employee Contributions and the aggregate amount of Retirement Allowances paid to the Retiree and Beneficiary, shall be paid in a single lump sum to such person or persons nominated by written designation of the Retiree duly executed and filed with the Board. If there are no such person or persons surviving the Retiree and the Beneficiary, any such difference shall be paid to the estate of the second to die of the Retiree or Beneficiary.

# Summary of Benefit Provisions
# (Concluded)

## Rehire Before or After Retirement

**A former member who is vested** and is not a DROP participant and who later becomes a Police Officer or Firefighter (but not a Police Assistant) shall have the benefit pertaining to total Credited Service earned on and after July 1, 2014 calculated in accordance with the terms of Component I of the Retirement System in effect at the time of the last separation from service. If the former member has previously withdrawn mandatory accumulated contributions, and such withdrawn contributions are not repaid within two years of the rehire date, only the Credited Service earned on and after the rehire date shall be taken into consideration in determining the retirement allowance.

**Retirement benefits for a Retiree who returns to active full time employment** other than as a Police Assistant shall be subject to the following provisions:

- A Retiree who returns to work will have the Retirement Allowance suspended upon re-employment. The variable pension improvement factor (escalator) shall not be added to the amount of the original Retirement Allowance during the Retiree's re-employment period.

- A Retiree who returns to work will be entitled to receive a second Retirement Allowance in accordance with the provisions of the Retirement System in effect during the re-employment period.

- A Retiree's Average Final Compensation for purposes of determining the second Retirement Allowance will be based upon the Compensation earned by the Retiree after the return to work.

- An individual who retires for a second time will not be allowed to change the payment option selected with respect to the original Retirement Allowance. However, the individual may select a separate payment option with respect to the second Retirement Allowance.

# SECTION F

## ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

# Funding Methods

***The entry age actuarial cost method*** was used in determining liabilities and normal cost as prescribed by GASB Statement Nos. 67 and 68. Under this method, each individual's service cost is determined as a level percent of pay from plan inception to DROP or termination of active service. This method is used in this report to comply with the GASB Standards and differs from the method used for funding the plan.

***Projection of Employer Contributions.*** Actual employer contributions through June 30, 2023 are set at 12.25% of pay. The amortization period and method after 2023 has been set to level percent of payroll 15-year layered amortizations under the Board's Funding Policy. Additional funding for Transition Costs may occur as a result of Component II ASF transfers.

***Present assets*** are set equal to the Market Value.

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***The data about persons now covered and about present assets*** was furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the actuary. Please see the June 30, 2021 actuarial valuation report dated March 24, 2022 (Section E) for a description of any data adjustments that were made by the actuary.

# Summary of Assumptions and Methods Used for GASB Valuation

**All demographic assumptions are estimates of future experience except as noted. The rationale for the assumptions is based on experience studies where noted.**

## Economic Assumptions

***For the Determination of the June 30, 2022 TPL:***

***The investment return rate*** used in the valuation was 6.93% per year, compounded annually (net after investment expenses). This is a prescribed assumption set by the Retirement System.

***Pay increase assumptions*** for individual active members are shown on the following pages. Part of the assumption for each age is for a merit and/or seniority increase, and the other recognizes wage inflation. **Wage inflation** is assumed to be 3.0% per year. The rationale is based on the 2015-2020 Experience Study.

***Price Inflation*** is not directly used in the valuation. For purposes of assessing the reasonableness of the assumed rate of return we assumed price inflation of 2.50% per year. The rationale is based on the 2015-2020 Experience Study.

***Administrative expenses*** are assumed to be 1.07% of payroll. The rationale is based on the 2015-2020 Experience Study.

## Non-Economic Assumptions

***The mortality table*** used to measure healthy retired life mortality is the PubS-2010 Public Safety Retiree table for males and females with male rates multiplied by 115% and female rates multiplied by 125%. The mortality table used to measure disabled retired life mortality is the PubS-2010 Public Safety Disabled Retiree table for males and females with male rates multiplied by 114%. The mortality table used to measure pre-retirement life mortality is the PubS-2010 Public Safety Employee table for males and females with 50% of deaths assumed to be duty related. The tables are projected to be fully generational, based on the two-dimensional, sex distinct mortality improvement scale MP-2021. The rationale is based on the 2015-2020 Experience Study.

***The probabilities of age/service retirement*** for members eligible to retire are shown on the following pages. The rationale is based on the 2015-2020 Experience Study.

***The probabilities of separation*** from service are shown for sample ages on the following pages. The rationale is based on the 2015-2020 Experience Study.

## Sample Salary Adjustment Rates

| | Salary Increase Assumptions for an Individual Member | | |
|---|---|---|---|
| Service | Merit & Seniority | Base (Economic) | Increase Next Year |
| 5 | 6.00% | 3.00% | 9.00% |
| 10 | 1.90% | 3.00% | 4.90% |
| 15 | 1.00% | 3.00% | 4.00% |
| 20 | 1.00% | 3.00% | 4.00% |
| 25 | 1.00% | 3.00% | 4.00% |
| 30 | 1.00% | 3.00% | 4.00% |
| 35 | 1.00% | 3.00% | 4.00% |

The rationale is based on the 2015-2020 Experience Study.

## Single Life Retirement Values
## Based on PubS-2010
## 115% of Male Rates / 125% of Female Rates
## Using Projection Scale MP-2021

| Sample Attained Ages in 2021 | Future Life Expectancy (years) | |
|---|---|---|
| | Men | Women |
| 45 | 39.27 | 40.61 |
| 50 | 34.16 | 35.42 |
| 55 | 29.13 | 30.35 |
| 60 | 24.30 | 25.53 |
| 65 | 19.79 | 21.01 |
| 70 | 15.63 | 16.77 |
| 75 | 11.84 | 12.86 |
| 80 | 8.55 | 9.46 |

# Probabilities of Service Retirement/DROP

| | Percent of Eligible Active Members Retiring or Entering DROP Within Next Year | |
|---|---|---|
| Age | Police | Fire |
| 35 | 20% | |
| 36 | 20% | |
| 37 | 20% | |
| 38 | 20% | |
| 39 | 20% | |
| 40 | 20% | |
| 41 | 20% | |
| 42 | 20% | |
| 43 | 20% | |
| 44 | 20% | |
| 45 | 20% | |
| 46 | 20% | |
| 47 | 20% | |
| 48 | 20% | |
| 49 | 20% | |
| 50 | 30% | 20% |
| 51 | 30% | 20% |
| 52 | 30% | 20% |
| 53 | 30% | 20% |
| 54 | 30% | 20% |
| 55 | 30% | 20% |
| 56 | 30% | 20% |
| 57 | 30% | 20% |
| 58 | 30% | 20% |
| 59 | 30% | 20% |
| 60 | 30% | 100% |
| 61 | 30% | 100% |
| 62 | 30% | 100% |
| 63 | 30% | 100% |
| 64 | 30% | 100% |
| 65 | 100% | 100% |

Police members eligible for retirement under 20 & Out with at least 10-years of Component II (Legacy) benefit service are assumed to retire or enter DROP while eligible for Component II (Legacy) normal retirement. These members are assumed to have 40% probability of retiring or entering DROP during the first year of eligibility. All other members are assumed to retire or enter DROP while eligible for Component I (Hybrid) normal retirement only. This assumption was first used as of June 30, 2021 with the rationale based on the 2015-2020 Experience Study.

# Probabilities of Separation

| Sample Ages | Years of Service | % of Active Members Withdrawing within Next Year | |
|---|---|---|---|
| | | Police | Fire |
| ALL | 0 | 11.00% | 5.00% |
| | 1 | 9.00% | 3.00% |
| | 2 | 7.50% | 3.00% |
| | 3 | 6.25% | 2.50% |
| | 4 | 5.50% | 2.50% |
| 25 | 5 & Over | 5.50% | 2.50% |
| 30 | | 4.95% | 2.50% |
| 35 | | 3.45% | 2.50% |
| 40 | | 2.55% | 2.50% |
| 45 | | 2.25% | 2.50% |
| 50 | | 1.65% | 2.50% |
| 55 | | 1.20% | 2.50% |
| 60 | | 1.20% | 2.50% |

The rationale is based on the 2015-2020 Experience Study.

| Sample Ages | % of Active Members Becoming Disabled within Next Year | |
|---|---|---|
| | Ordinary | Duty |
| 25 | 0.05% | 0.28% |
| 30 | 0.05% | 0.28% |
| 35 | 0.08% | 0.48% |
| 40 | 0.11% | 0.62% |
| 45 | 0.16% | 0.89% |
| 50 | 0.21% | 1.17% |
| 55 | 0.21% | 1.17% |
| 60 | 0.21% | 1.17% |

The rationale is based on the 2015-2020 Experience Study.

# Miscellaneous and Technical Assumptions

**Annuity Savings Fund Excess Interest:** The Component I (Hybrid) Transition Cost is funded by Component II (Legacy) ASF returns in excess of 5.25%. ASF return excess ceases in 2023 and the POA mandates the use of a 6.75% return assumption until 2023. The current assumption is:

- For purposes of determining valuation assets and liabilities, only include transfers that have actually occurred as of the valuation date.
- For purposes of determining the Section 9.5 funded status, projecting the amount of future transfers.

**Average Final Compensation (AFC):** AFC is estimated by assuming the payroll provided in the valuation will increase at the pay-increase rate. We understand that the payroll provided for the valuation is consistent with the definition of AFC.

**Class Codes / Bargaining Unit:** For valuation purposes, members are categorized as DPOA, DFFA, DPLSA, or DPCOA based on bargaining units provided by the Retirement System and are primarily used in the valuation to determine deferred retirement commencement.

Eligibility for the 20 & Out Legacy benefit is based on class codes taken from the 2014 data file.

**Data Adjustments:** Assumptions regarding incomplete or missing data are reviewed annually with the System and adjusted as directed by the System.

**Decrement Operation:** Ordinary disability and mortality decrements do not operate during the first five years of service. Disability and withdrawal do not operate during retirement eligibility.

**Decrement Timing:** Decrements are assumed to occur mid-year.

**Decrement Relativity:** Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.

**Deferred Vested Benefit Commencement Age:** Members are assumed to commence benefits at the age in which they are first eligible for unreduced benefits.

**Disability Load:** Duty Disability benefits were increased by 2.0% to account for the Death While Disabled provision based on an analysis of the estimated impact for a sample set of individuals.

**Disability Change Age:** The duty disability benefit is assumed to change at the earlier of age 65 or the time the member would have had 25 years of credited service (including prior service). The benefit at change age was assumed to be 2.0% times final compensation times projected benefit service.

# Miscellaneous and Technical Assumptions

| | |
|---|---|
| **DROP Assumption:** | Members are assumed to retire or DROP based on assumed rates.<br><br>For Police members eligible for a maximum DROP period of 10-years, 75% of eligible members are assumed to enter the DROP and remain in the DROP for seven years.<br><br>For Police members eligible for a maximum DROP period of 15-years, 75% of eligible members are assumed to enter the DROP and remain in the DROP for nine years.<br><br>For Fire members, 60% of eligible members are assumed to enter the DROP and remain in the DROP for five years.<br><br>Employer contributions are assumed not to be made on DROP payroll. Expected benefits paid into DROP contributions are discounted at the assumed rate of return for valuation purposes. Balances for current DROP participants are held outside of system assets and are excluded from the valuation.<br><br>Members in the Component II (Legacy) DROP as of June 30, 2014 are excluded from the Component I (Hybrid) valuation. |
| **DROP Cost Neutrality:** | An assessment of the cost neutrality of the DROP was outside the scope of this valuation. |
| **Duty Disability Benefits:** | The Police and Fire Retirement System Combined Plan provides disability benefits for both Component I (Hybrid) and Component II (Legacy) members. Our understanding of the Component II (Legacy) freeze as it relates to duty disability benefits was that the only benefit payable from Component II (Legacy) would be the frozen accrued benefit, payable at the time of conversion to normal retirement (for members becoming disabled after 6/30/2014) and that any benefits payable during the period of disability would be paid from Component I (Hybrid).<br><br>We have valued the pre-conversion duty disability benefit in a manner consistent with the plan provision (paid out of Component I (Hybrid)). We understand that the System is in the process of moving to a new data system and expect this issue to be corrected once the new data system is in place.<br><br>For current duty disability retirees that became disabled after June 30, 2014, we have estimated the amount that will be paid by Component I (Hybrid) and Component II (Legacy) upon conversion.<br><br>For future retirees, duty disability retirement benefits prior to age 65 are assumed to be paid from Component I (Hybrid). |
| **Eligibility Testing:** | Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date of decrement. |

# Miscellaneous and Technical Assumptions

| | |
|---|---|
| **Forfeiture Assumption:** | It is assumed that 0% of members will elect to forfeit their benefit. |
| **Form of Payment:** | No adjustment has been made for alternate forms of payment elections. |
| **Incidence of Contributions:** | Employer contributions are assumed to occur quarterly. |
| **IRC Section 401(a)(17) Limit:** | All of the member salary provided falls below the current 401(a)(17) limit. The limit is assumed to grow with wage inflation. |
| **IRC Section 401(h) Limit:** | We did not test for the 401(h) limit on employer contributions for medical benefits. No employer contributions are anticipated in this valuation. |
| **IRC Section 415 Limit:** | We assumed that no benefits will be limited by IRC Section 415. The limit is assumed to grow with wage inflation. |
| **Mandatory Retirement Age:** | Currently most members of the DPFRS are subject to a mandatory retirement age of 60. We have assumed employment would end at age 60 for Fire members regardless of the length of their DROP participation at that age. We understand that the mandatory retirement age is currently not enforced for Police members and have assumed the mandatory retirement age is not in effect for Police members. |
| **Marriage Assumption:** | 100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. This assumption accounts for potential dependent children/dependent parent death benefits. No other assumption is made for surviving children/dependent parents. Male spouses are assumed to be three years older than female spouses. |
| **New Entrant Assumption:** | New entrants are assumed to replace the current workforce as members separate from service under current valuation assumptions. Total payroll is expected to grow with wage inflation. |
| **Pay Increase Timing:** | End of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year starting on the valuation date. |
| **Pop-Up Benefits:** | For current retirees with a pop-up benefit, the value of the pop-up was estimated by valuing a non-pop-up option and increasing the associated liabilities by 1%. |
| **Post-Retirement COLA / Variable Pension Improvement Factor (VPIF):** | Unless stated otherwise, the calculations in this report as of the valuation date are based on an assumed average 1.0% future VPIF. |

# Miscellaneous and Technical Assumptions

**Rate Stabilization Fund (RSF):** The plan document does not provide specific direction regarding how the RSF is considered in the valuation. We currently treat the RSF in the following manner (unless specifically stated otherwise):

- For purposes of determining a funded ratio in funding valuation (other than with regard to the Section 9.5 testing), the Rate Stabilization Fund (RSF) has been included in the assets;
- For purposes of determining contributions starting in FY 2024, we exclude the RSF from the assets (thereby calculating a higher contribution rate); and
- For purposes of Section 9.5 testing, the RSF is excluded from the assets.

We believe this treatment is in compliance with the plan document and the Board's Section 9.5 methods and assumptions. When projecting assets, we have assumed that the RSF would grow at the investment rate of return.

**Service Credit Accruals:** Service accruals for calculating benefits end as of June 30, 2014 for Component II (Legacy) and begin as of June 30, 2014 for Component I (Hybrid). However, service in Component I (Hybrid) and Component II (Legacy) may be used to satisfy benefit eligibility requirements in both plans.

**Voluntary Employee Contribution Fund:** For purposes of determining the plans funded status, Voluntary Employee Contributions are included in both the assets and the liabilities of the plan. However, potential arbitrage resulting from the Voluntary Employee Contributions is not considered.

**Workers Compensation Offset:** No Workers Compensation offsets are assumed for duty disability benefits.

# SECTION G

## CALCULATION OF THE SINGLE DISCOUNT RATE

# Calculation of the Single Discount Rate at End of Year

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension 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 pension 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 pension plan investments is 6.93%; the municipal bond rate is 3.69%; and the resulting Single Discount Rate is 6.93% as of June 30, 2022. 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 benefits). For purposes of determining the discount rate as of June 30, 2022, the employer contributions for the 10-year period ending June 30, 2023 are set at 12.25% of payroll. Subsequent employer contributions were based on the Board-adopted Funding Policy. The actual employer rate will be determined by future funding valuations and is expected to be different when based on open group payroll. Member contributions were set at 6% for members hired before June 30, 2014 and at 8% for members hired after June 30, 2014. The voluntary member contributions were excluded for the projections (and assets). The VPIF was assumed to be 1.0% compound each year. The VPIF reduction under Section 9.5 of the plan was assumed not to occur. The Rate Stabilization Fund (RSF) was ignored in the development of the post-2023 employer contribution.

Note that these projections are specifically used to determine the GASB discount rate and should not be interpreted as a funding projection or recommendation.

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 (SDR). It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR. For purposes of determining the discount rate as of June 30, 2022, the benefit payments reflect the plan provisions in force as of June 30, 2022. Since the plan is over 100% funded on the measurement date and the RSF is assumed not to be used to reduce future contributions in the projections, the assets are projected to never be depleted.

# Single Discount Rate Development
# Projection of Contributions
# End of Year

| Fiscal Year Ending June 30, | Payroll for Current Employees | Projected Contributions from Current Employees | Projected Employer Service Cost Contribution | Employer Administrative Expense Contributions # | Projected Employer UAL Contributions | Projected Total Contributions |
|---|---|---|---|---|---|---|
| 2023 | $ 146,240,995 | $ 10,155,693 | $ 17,199,066 | $ 1,564,779 | $ (849,323) | $ 28,070,214 |
| 2024 | 141,572,256 | 9,916,842 | 16,425,363 | 1,514,823 | - | 27,857,027 |
| 2025 | 137,343,328 | 9,700,518 | 15,703,458 | 1,469,574 | - | 26,873,549 |
| 2026 | 133,149,928 | 9,481,411 | 14,980,033 | 1,424,704 | - | 25,886,148 |
| 2027 | 128,978,674 | 9,258,048 | 14,266,118 | 1,380,072 | - | 24,904,238 |
| 2028 | 125,105,965 | 9,045,880 | 13,617,964 | 1,338,634 | - | 24,002,479 |
| 2029 | 121,432,440 | 8,839,916 | 13,012,160 | 1,299,327 | - | 23,151,403 |
| 2030 | 118,046,770 | 8,647,090 | 12,465,234 | 1,263,100 | - | 22,375,424 |
| 2031 | 114,770,969 | 8,457,241 | 11,947,901 | 1,228,049 | - | 21,633,191 |
| 2032 | 111,561,183 | 8,268,863 | 11,446,939 | 1,193,705 | - | 20,909,507 |
| 2033 | 108,614,753 | 8,095,933 | 10,992,275 | 1,162,178 | - | 20,250,386 |
| 2034 | 105,668,122 | 7,922,759 | 10,545,311 | 1,130,649 | - | 19,598,719 |
| 2035 | 102,743,613 | 7,751,570 | 10,107,222 | 1,099,357 | - | 18,958,149 |
| 2036 | 100,234,302 | 7,606,585 | 9,733,557 | 1,072,507 | - | 18,412,649 |
| 2037 | 97,997,894 | 7,477,050 | 9,402,942 | 1,048,577 | - | 17,928,569 |
| 2038 | 95,887,572 | 7,351,724 | 9,097,421 | 1,025,997 | - | 17,475,142 |
| 2039 | 93,648,757 | 7,218,042 | 8,788,954 | 1,002,042 | - | 17,009,038 |
| 2040 | 90,855,294 | 7,045,892 | 8,424,609 | 972,152 | - | 16,442,654 |
| 2041 | 87,415,321 | 6,815,572 | 8,006,261 | 935,344 | - | 15,757,177 |
| 2042 | 82,681,191 | 6,474,443 | 7,476,123 | 884,689 | - | 14,835,255 |
| 2043 | 76,511,775 | 6,012,332 | 6,830,981 | 818,676 | - | 13,661,989 |
| 2044 | 69,622,101 | 5,485,615 | 6,135,647 | 744,956 | - | 12,366,218 |
| 2045 | 61,672,171 | 4,869,962 | 5,352,232 | 659,892 | - | 10,882,087 |
| 2046 | 52,262,345 | 4,134,043 | 4,445,273 | 559,207 | - | 9,138,523 |
| 2047 | 42,645,239 | 3,377,334 | 3,543,146 | 456,304 | - | 7,376,784 |
| 2048 | 34,129,294 | 2,705,352 | 2,776,574 | 365,183 | - | 5,847,108 |
| 2049 | 26,701,258 | 2,118,129 | 2,133,734 | 285,703 | - | 4,537,565 |
| 2050 | 20,190,539 | 1,602,895 | 1,584,572 | 216,039 | - | 3,403,506 |
| 2051 | 14,912,163 | 1,184,529 | 1,150,759 | 159,560 | - | 2,494,847 |
| 2052 | 10,901,382 | 866,492 | 831,792 | 116,645 | - | 1,814,929 |
| 2053 | 7,875,090 | 626,529 | 595,235 | 84,263 | - | 1,306,026 |
| 2054 | 5,647,470 | 449,602 | 422,265 | 60,428 | - | 932,295 |
| 2055 | 4,000,435 | 318,796 | 295,201 | 42,805 | - | 656,802 |
| 2056 | 2,780,977 | 221,892 | 202,254 | 29,756 | - | 453,902 |
| 2057 | 1,896,073 | 151,413 | 135,269 | 20,288 | - | 306,969 |
| 2058 | 1,267,096 | 101,233 | 88,663 | 13,558 | - | 203,454 |
| 2059 | 832,171 | 66,512 | 56,974 | 8,904 | - | 132,390 |
| 2060 | 544,266 | 43,517 | 36,558 | 5,824 | - | 85,899 |
| 2061 | 337,858 | 27,023 | 22,154 | 3,615 | - | 52,792 |
| 2062 | 200,913 | 16,073 | 12,902 | 2,150 | - | 31,125 |
| 2063 | 117,487 | 9,399 | 7,320 | 1,257 | - | 17,976 |
| 2064 | 62,749 | 5,020 | 3,708 | 671 | - | 9,399 |
| 2065 | 28,011 | 2,241 | 1,621 | 300 | - | 4,162 |
| 2066 | 10,929 | 874 | 577 | 117 | - | 1,568 |
| 2067 | 3,460 | 277 | 180 | 37 | - | 494 |
| 2068 | 403 | 32 | 19 | 4 | - | 55 |
| 2069 | - | - | - | - | - | - |
| 2070 | - | - | - | - | - | - |
| 2071 | - | - | - | - | - | - |
| 2072 | - | - | - | - | - | - |

# *Expenses assumed to be paid by employer.*

Employer contributions as shown may differ substantially from those determined by a funding valuation.

# Single Discount Rate Development
# Projection of Plan Fiduciary Net Position
# End of Year
# (Net of Voluntary Employee Contribution)

| Fiscal Year Ending June 30, | Projected Beginning Plan Net Position | Projected Total Contributions | Projected Benefit Payments | Projected Administrative Expenses | Projected Investment Earnings at 6.93% | Projected Ending Plan Net Position |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f)=(a)+(b)-(c)-(d)+(e) |
| 2023 | $ 272,782,241 | $ 28,070,214 | $ 7,136,072 | $ 1,564,779 | $ 19,563,716 | $ 311,715,321 |
| 2024 | 311,715,321 | 27,857,027 | 8,408,501 | 1,514,823 | 22,212,866 | 351,861,891 |
| 2025 | 351,861,891 | 26,873,549 | 9,762,084 | 1,469,574 | 24,916,942 | 392,420,725 |
| 2026 | 392,420,725 | 25,886,148 | 11,321,647 | 1,424,704 | 27,642,424 | 433,202,946 |
| 2027 | 433,202,946 | 24,904,238 | 12,800,260 | 1,380,072 | 30,386,324 | 474,313,176 |
| 2028 | 474,313,176 | 24,002,479 | 14,421,184 | 1,338,634 | 33,150,727 | 515,706,564 |
| 2029 | 515,706,564 | 23,151,403 | 16,145,589 | 1,299,327 | 35,932,883 | 557,345,934 |
| 2030 | 557,345,934 | 22,375,424 | 17,767,091 | 1,263,100 | 38,738,044 | 599,429,211 |
| 2031 | 599,429,211 | 21,633,191 | 19,473,122 | 1,228,049 | 41,572,198 | 641,933,428 |
| 2032 | 641,933,428 | 20,909,507 | 21,525,497 | 1,193,705 | 44,424,331 | 684,548,064 |
| 2033 | 684,548,064 | 20,250,386 | 23,602,758 | 1,162,178 | 47,285,372 | 727,318,886 |
| 2034 | 727,318,886 | 19,598,719 | 25,797,725 | 1,130,649 | 50,153,480 | 770,142,712 |
| 2035 | 770,142,712 | 18,958,149 | 28,001,238 | 1,099,357 | 53,025,341 | 813,025,607 |
| 2036 | 813,025,607 | 18,412,649 | 30,184,254 | 1,072,507 | 55,905,080 | 856,086,575 |
| 2037 | 856,086,575 | 17,928,569 | 32,258,185 | 1,048,577 | 58,802,870 | 899,511,252 |
| 2038 | 899,511,252 | 17,475,142 | 34,313,341 | 1,025,997 | 61,727,503 | 943,374,559 |
| 2039 | 943,374,559 | 17,009,038 | 36,359,593 | 1,002,042 | 64,682,451 | 987,704,414 |
| 2040 | 987,704,414 | 16,442,654 | 38,641,575 | 972,152 | 67,658,486 | 1,032,191,827 |
| 2041 | 1,032,191,827 | 15,757,177 | 41,138,581 | 935,344 | 70,634,292 | 1,076,509,370 |
| 2042 | 1,076,509,370 | 14,835,255 | 43,992,047 | 884,689 | 73,578,597 | 1,120,046,486 |
| 2043 | 1,120,046,486 | 13,661,989 | 47,384,932 | 818,676 | 76,442,401 | 1,161,947,268 |
| 2044 | 1,161,947,268 | 12,366,218 | 51,021,419 | 744,956 | 79,180,597 | 1,201,727,708 |
| 2045 | 1,201,727,708 | 10,882,087 | 55,087,244 | 659,892 | 81,751,195 | 1,238,613,853 |
| 2046 | 1,238,613,853 | 9,138,523 | 59,647,696 | 559,207 | 84,096,059 | 1,271,641,533 |
| 2047 | 1,271,641,533 | 7,376,784 | 64,544,177 | 456,304 | 86,161,540 | 1,300,179,376 |
| 2048 | 1,300,179,376 | 5,847,108 | 69,257,579 | 365,183 | 87,929,618 | 1,324,333,340 |
| 2049 | 1,324,333,340 | 4,537,565 | 73,635,595 | 285,703 | 89,412,422 | 1,344,362,030 |
| 2050 | 1,344,362,030 | 3,403,506 | 77,758,383 | 216,039 | 90,623,685 | 1,360,414,799 |
| 2051 | 1,360,414,799 | 2,494,847 | 81,489,660 | 159,560 | 91,579,985 | 1,372,840,412 |
| 2052 | 1,372,840,412 | 1,814,929 | 84,777,763 | 116,645 | 92,307,353 | 1,382,068,286 |
| 2053 | 1,382,068,286 | 1,306,026 | 87,651,728 | 84,263 | 92,832,695 | 1,388,471,017 |
| 2054 | 1,388,471,017 | 932,295 | 90,062,871 | 60,428 | 93,182,337 | 1,392,462,350 |
| 2055 | 1,392,462,350 | 656,802 | 92,078,554 | 42,805 | 93,381,477 | 1,394,379,270 |
| 2056 | 1,394,379,270 | 453,902 | 93,704,190 | 29,756 | 93,452,467 | 1,394,551,693 |
| 2057 | 1,394,551,693 | 306,969 | 94,959,771 | 20,288 | 93,416,955 | 1,393,295,559 |
| 2058 | 1,393,295,559 | 203,454 | 95,873,144 | 13,558 | 93,295,489 | 1,390,907,799 |
| 2059 | 1,390,907,799 | 132,390 | 96,444,739 | 8,904 | 93,108,281 | 1,387,694,827 |
| 2060 | 1,387,694,827 | 85,899 | 96,622,138 | 5,824 | 92,878,099 | 1,384,030,864 |
| 2061 | 1,384,030,864 | 52,792 | 96,420,789 | 3,615 | 92,629,994 | 1,380,289,246 |
| 2062 | 1,380,289,246 | 31,125 | 95,841,855 | 2,150 | 92,389,735 | 1,376,866,101 |
| 2063 | 1,376,866,101 | 17,976 | 94,865,273 | 1,257 | 92,185,366 | 1,374,202,912 |
| 2064 | 1,374,202,912 | 9,399 | 93,577,498 | 671 | 92,044,408 | 1,372,678,550 |
| 2065 | 1,372,678,550 | 4,162 | 92,048,658 | 300 | 91,990,691 | 1,372,624,446 |
| 2066 | 1,372,624,446 | 1,568 | 90,318,222 | 117 | 92,045,815 | 1,374,353,490 |
| 2067 | 1,374,353,490 | 494 | 88,447,433 | 37 | 92,229,341 | 1,378,135,855 |
| 2068 | 1,378,135,855 | 55 | 86,460,453 | 4 | 92,559,141 | 1,384,234,594 |
| 2069 | 1,384,234,594 | - | 84,351,572 | - | 93,053,631 | 1,392,936,653 |
| 2070 | 1,392,936,653 | - | 82,121,024 | - | 93,732,677 | 1,404,548,306 |
| 2071 | 1,404,548,306 | - | 79,768,379 | - | 94,617,518 | 1,419,397,445 |
| 2072 | 1,419,397,445 | - | 77,292,191 | - | 95,730,927 | 1,437,836,181 |

Employer contributions as shown may differ substantially from those determined by a funding valuation.

# Single Discount Rate Development
# Projection of Plan Fiduciary Net Position
# End of Year (Concluded)

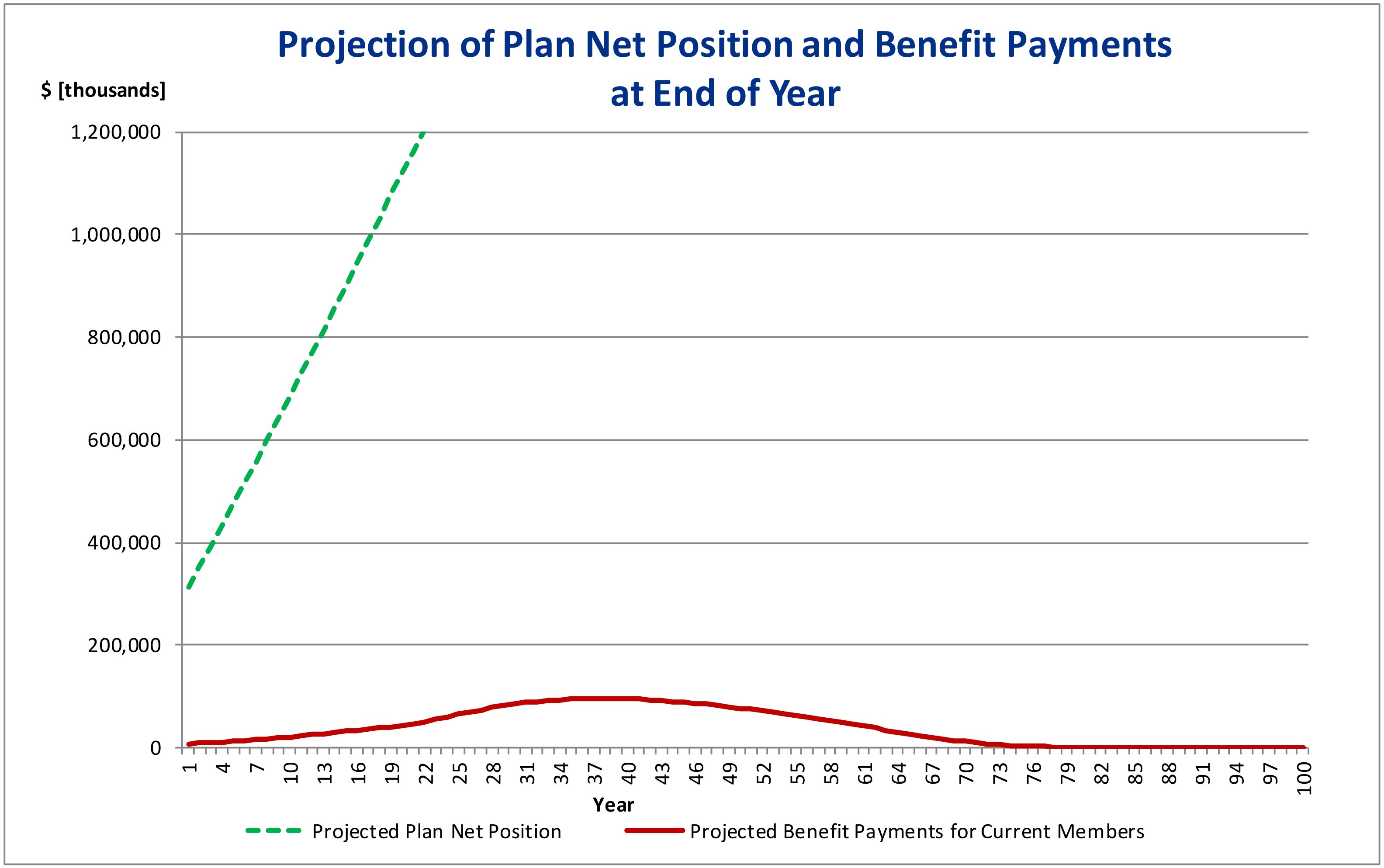
| Fiscal Year Ending June 30, | Projected Beginning Plan Net Position | Projected Total Contributions | Projected Benefit Payments | Projected Administrative Expenses | Projected Investment Earnings at 6.93% | Projected Ending Plan Net Position |
|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f)=(a)+(b)-(c)-(d)+(e) |
| 2073 | $ 1,437,836,181 | $ - | $ 74,690,000 | $ - | $ 97,097,387 | $ 1,460,243,567 |
| 2074 | 1,460,243,567 | - | 71,960,241 | - | 98,743,220 | 1,487,026,547 |
| 2075 | 1,487,026,547 | - | 69,100,773 | - | 100,696,702 | 1,518,622,476 |
| 2076 | 1,518,622,476 | - | 66,109,951 | - | 102,988,196 | 1,555,500,720 |
| 2077 | 1,555,500,720 | - | 62,987,824 | - | 105,650,228 | 1,598,163,125 |
| 2078 | 1,598,163,125 | - | 59,736,335 | - | 108,717,510 | 1,647,144,300 |
| 2079 | 1,647,144,300 | - | 56,360,695 | - | 112,226,912 | 1,703,010,517 |
| 2080 | 1,703,010,517 | - | 52,870,181 | - | 116,217,361 | 1,766,357,697 |
| 2081 | 1,766,357,697 | - | 49,279,228 | - | 120,729,663 | 1,837,808,132 |
| 2082 | 1,837,808,132 | - | 45,608,455 | - | 125,806,240 | 1,918,005,918 |
| 2083 | 1,918,005,918 | - | 41,884,238 | - | 131,490,830 | 2,007,612,510 |
| 2084 | 2,007,612,510 | - | 38,138,456 | - | 137,828,184 | 2,107,302,238 |
| 2085 | 2,107,302,238 | - | 34,407,868 | - | 144,863,782 | 2,217,758,152 |
| 2086 | 2,217,758,152 | - | 30,732,470 | - | 152,643,596 | 2,339,669,278 |
| 2087 | 2,339,669,278 | - | 27,154,151 | - | 161,213,949 | 2,473,729,077 |
| 2088 | 2,473,729,077 | - | 23,714,942 | - | 170,621,466 | 2,620,635,600 |
| 2089 | 2,620,635,600 | - | 20,454,941 | - | 180,913,155 | 2,781,093,814 |
| 2090 | 2,781,093,814 | - | 17,410,546 | - | 192,136,630 | 2,955,819,898 |
| 2091 | 2,955,819,898 | - | 14,612,432 | - | 204,340,479 | 3,145,547,945 |
| 2092 | 3,145,547,945 | - | 12,083,580 | - | 217,574,790 | 3,351,039,155 |
| 2093 | 3,351,039,155 | - | 9,838,038 | - | 231,891,835 | 3,573,092,952 |
| 2094 | 3,573,092,952 | - | 7,880,295 | - | 247,346,863 | 3,812,559,519 |
| 2095 | 3,812,559,519 | - | 6,205,266 | - | 263,998,964 | 4,070,353,217 |
| 2096 | 4,070,353,217 | - | 4,799,467 | - | 281,911,962 | 4,347,465,712 |
| 2097 | 4,347,465,712 | - | 3,642,753 | - | 301,155,267 | 4,644,978,225 |
| 2098 | 4,644,978,225 | - | 2,710,177 | - | 321,804,656 | 4,964,072,704 |
| 2099 | 4,964,072,704 | - | 1,974,100 | - | 343,942,982 | 5,306,041,585 |
| 2100 | 5,306,041,585 | - | 1,405,966 | - | 367,660,781 | 5,672,296,401 |
| 2101 | 5,672,296,401 | - | 977,728 | - | 393,056,830 | 6,064,375,502 |
| 2102 | 6,064,375,502 | - | 662,991 | - | 420,238,634 | 6,483,951,145 |
| 2103 | 6,483,951,145 | - | 437,797 | - | 449,322,899 | 6,932,836,247 |
| 2104 | 6,932,836,247 | - | 281,168 | - | 480,435,973 | 7,412,991,051 |
| 2105 | 7,412,991,051 | - | 175,416 | - | 513,714,304 | 7,926,529,939 |
| 2106 | 7,926,529,939 | - | 106,192 | - | 549,304,907 | 8,475,728,653 |
| 2107 | 8,475,728,653 | - | 62,315 | - | 587,365,873 | 9,063,032,211 |
| 2108 | 9,063,032,211 | - | 35,415 | - | 628,066,926 | 9,691,063,722 |
| 2109 | 9,691,063,722 | - | 19,482 | - | 671,590,052 | 10,362,634,292 |
| 2110 | 10,362,634,292 | - | 10,374 | - | 718,130,203 | 11,080,754,120 |
| 2111 | 11,080,754,120 | - | 5,351 | - | 767,896,078 | 11,848,644,847 |
| 2112 | 11,848,644,847 | - | 2,678 | - | 821,110,997 | 12,669,753,167 |
| 2113 | 12,669,753,167 | - | 1,302 | - | 878,013,850 | 13,547,765,714 |
| 2114 | 13,547,765,714 | - | 618 | - | 938,860,143 | 14,486,625,239 |
| 2115 | 14,486,625,239 | - | 286 | - | 1,003,923,119 | 15,490,548,072 |
| 2116 | 15,490,548,072 | - | 130 | - | 1,073,494,977 | 16,564,042,919 |
| 2117 | 16,564,042,919 | - | 58 | - | 1,147,888,172 | 17,711,931,034 |
| 2118 | 17,711,931,034 | - | 25 | - | 1,227,436,820 | 18,939,367,829 |
| 2119 | 18,939,367,829 | - | 10 | - | 1,312,498,190 | 20,251,866,009 |
| 2120 | 20,251,866,009 | - | 4 | - | 1,403,454,314 | 21,655,320,319 |
| 2121 | 21,655,320,319 | - | 2 | - | 1,500,713,698 | 23,156,034,016 |
| 2122 | 23,156,034,016 | - | - | - | 1,604,713,157 | 24,760,747,173 |

# Single Discount Rate Development
# Present Values of Projected Benefits
# End of Year

| Fiscal Year Ending June 30, | Projected Beginning Plan Net Position | Projected Benefit Payments | Funded Portion of Benefit Payments | Unfunded Portion of Benefit Payments | Present Value of Funded Benefit Payments using Expected Return Rate (v) | Present Value of Unfunded Benefit Payments using Municipal Bond Rate ($v_f$) | Present Value of Benefit Payments using Single Discount Rate (sdr) |
|---|---|---|---|---|---|---|---|
| (a) | (b) | (c) | (d) | (e) | (f)=(d)*v^((a)-.5) | (g)=(e)*vf ^((a)-.5) | (h)=(c)/(1+sdr)^(a-.5) |
| 2023 | $ 272,782,241 | $ 7,136,072 | $ 7,136,072 | $ - | $ 6,900,959 | $ - | $ 6,900,959 |
| 2024 | 311,715,321 | 8,408,501 | 8,408,501 | - | 7,604,475 | - | 7,604,475 |
| 2025 | 351,861,891 | 9,762,084 | 9,762,084 | - | 8,256,455 | - | 8,256,455 |
| 2026 | 392,420,725 | 11,321,647 | 11,321,647 | - | 8,954,908 | - | 8,954,908 |
| 2027 | 433,202,946 | 12,800,260 | 12,800,260 | - | 9,468,272 | - | 9,468,272 |
| 2028 | 474,313,176 | 14,421,184 | 14,421,184 | - | 9,975,928 | - | 9,975,928 |
| 2029 | 515,706,564 | 16,145,589 | 16,145,589 | - | 10,444,958 | - | 10,444,958 |
| 2030 | 557,345,934 | 17,767,091 | 17,767,091 | - | 10,749,038 | - | 10,749,038 |
| 2031 | 599,429,211 | 19,473,122 | 19,473,122 | - | 11,017,658 | - | 11,017,658 |
| 2032 | 641,933,428 | 21,525,497 | 21,525,497 | - | 11,389,569 | - | 11,389,569 |
| 2033 | 684,548,064 | 23,602,758 | 23,602,758 | - | 11,679,313 | - | 11,679,313 |
| 2034 | 727,318,886 | 25,797,725 | 25,797,725 | - | 11,938,132 | - | 11,938,132 |
| 2035 | 770,142,712 | 28,001,238 | 28,001,238 | - | 12,118,047 | - | 12,118,047 |
| 2036 | 813,025,607 | 30,184,254 | 30,184,254 | - | 12,216,205 | - | 12,216,205 |
| 2037 | 856,086,575 | 32,258,185 | 32,258,185 | - | 12,209,453 | - | 12,209,453 |
| 2038 | 899,511,252 | 34,313,341 | 34,313,341 | - | 12,145,621 | - | 12,145,621 |
| 2039 | 943,374,559 | 36,359,593 | 36,359,593 | - | 12,035,833 | - | 12,035,833 |
| 2040 | 987,704,414 | 38,641,575 | 38,641,575 | - | 11,962,237 | - | 11,962,237 |
| 2041 | 1,032,191,827 | 41,138,581 | 41,138,581 | - | 11,909,878 | - | 11,909,878 |
| 2042 | 1,076,509,370 | 43,992,047 | 43,992,047 | - | 11,910,572 | - | 11,910,572 |
| 2043 | 1,120,046,486 | 47,384,932 | 47,384,932 | - | 11,997,732 | - | 11,997,732 |
| 2044 | 1,161,947,268 | 51,021,419 | 51,021,419 | - | 12,081,249 | - | 12,081,249 |
| 2045 | 1,201,727,708 | 55,087,244 | 55,087,244 | - | 12,198,623 | - | 12,198,623 |
| 2046 | 1,238,613,853 | 59,647,696 | 59,647,696 | - | 12,352,471 | - | 12,352,471 |
| 2047 | 1,271,641,533 | 64,544,177 | 64,544,177 | - | 12,500,221 | - | 12,500,221 |
| 2048 | 1,300,179,376 | 69,257,579 | 69,257,579 | - | 12,543,778 | - | 12,543,778 |
| 2049 | 1,324,333,340 | 73,635,595 | 73,635,595 | - | 12,472,378 | - | 12,472,378 |
| 2050 | 1,344,362,030 | 77,758,383 | 77,758,383 | - | 12,317,119 | - | 12,317,119 |
| 2051 | 1,360,414,799 | 81,489,660 | 81,489,660 | - | 12,071,600 | - | 12,071,600 |
| 2052 | 1,372,840,412 | 84,777,763 | 84,777,763 | - | 11,744,776 | - | 11,744,776 |
| 2053 | 1,382,068,286 | 87,651,728 | 87,651,728 | - | 11,355,956 | - | 11,355,956 |
| 2054 | 1,388,471,017 | 90,062,871 | 90,062,871 | - | 10,912,128 | - | 10,912,128 |
| 2055 | 1,392,462,350 | 92,078,554 | 92,078,554 | - | 10,433,321 | - | 10,433,321 |
| 2056 | 1,394,379,270 | 93,704,190 | 93,704,190 | - | 9,929,412 | - | 9,929,412 |
| 2057 | 1,394,551,693 | 94,959,771 | 94,959,771 | - | 9,410,325 | - | 9,410,325 |
| 2058 | 1,393,295,559 | 95,873,144 | 95,873,144 | - | 8,885,101 | - | 8,885,101 |
| 2059 | 1,390,907,799 | 96,444,739 | 96,444,739 | - | 8,358,808 | - | 8,358,808 |
| 2060 | 1,387,694,827 | 96,622,138 | 96,622,138 | - | 7,831,463 | - | 7,831,463 |
| 2061 | 1,384,030,864 | 96,420,789 | 96,420,789 | - | 7,308,653 | - | 7,308,653 |
| 2062 | 1,380,289,246 | 95,841,855 | 95,841,855 | - | 6,793,950 | - | 6,793,950 |
| 2063 | 1,376,866,101 | 94,865,273 | 94,865,273 | - | 6,288,902 | - | 6,288,902 |
| 2064 | 1,374,202,912 | 93,577,498 | 93,577,498 | - | 5,801,488 | - | 5,801,488 |
| 2065 | 1,372,678,550 | 92,048,658 | 92,048,658 | - | 5,336,861 | - | 5,336,861 |
| 2066 | 1,372,624,446 | 90,318,222 | 90,318,222 | - | 4,897,159 | - | 4,897,159 |
| 2067 | 1,374,353,490 | 88,447,433 | 88,447,433 | - | 4,484,918 | - | 4,484,918 |
| 2068 | 1,378,135,855 | 86,460,453 | 86,460,453 | - | 4,100,032 | - | 4,100,032 |
| 2069 | 1,384,234,594 | 84,351,572 | 84,351,572 | - | 3,740,790 | - | 3,740,790 |
| 2070 | 1,392,936,653 | 82,121,024 | 82,121,024 | - | 3,405,845 | - | 3,405,845 |
| 2071 | 1,404,548,306 | 79,768,379 | 79,768,379 | - | 3,093,868 | - | 3,093,868 |
| 2072 | 1,419,397,445 | 77,292,191 | 77,292,191 | - | 2,803,542 | - | 2,803,542 |

# Single Discount Rate Development
# Present Values of Projected Benefits
# End of Year (Concluded)

| Fiscal Year Ending June 30, | Projected Beginning Plan Net Position | Projected Benefit Payments | Funded Portion of Benefit Payments | Unfunded Portion of Benefit Payments | Present Value of Funded Benefit Payments using Expected Return Rate (v) | Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf) | Present Value of Benefit Payments using Single Discount Rate (sdr) |
|---|---|---|---|---|---|---|---|
| (a) | (b) | (c) | (d) | (e) | (f)=(d)*v^((a)-.5) | (g)=(e)*vf ^((a)-.5) | (h)=(c)/(1+sdr)^(a-.5) |
| 2073 | $ 1,437,836,181 | $ 74,690,000 | $ 74,690,000 | $ - | $ 2,533,578 | $ - | $ 2,533,578 |
| 2074 | 1,460,243,567 | 71,960,241 | 71,960,241 | - | 2,282,785 | - | 2,282,785 |
| 2075 | 1,487,026,547 | 69,100,773 | 69,100,773 | - | 2,050,008 | - | 2,050,008 |
| 2076 | 1,518,622,476 | 66,109,951 | 66,109,951 | - | 1,834,172 | - | 1,834,172 |
| 2077 | 1,555,500,720 | 62,987,824 | 62,987,824 | - | 1,634,294 | - | 1,634,294 |
| 2078 | 1,598,163,125 | 59,736,335 | 59,736,335 | - | 1,449,481 | - | 1,449,481 |
| 2079 | 1,647,144,300 | 56,360,695 | 56,360,695 | - | 1,278,942 | - | 1,278,942 |
| 2080 | 1,703,010,517 | 52,870,181 | 52,870,181 | - | 1,121,982 | - | 1,121,982 |
| 2081 | 1,766,357,697 | 49,279,228 | 49,279,228 | - | 978,001 | - | 978,001 |
| 2082 | 1,837,808,132 | 45,608,455 | 45,608,455 | - | 846,489 | - | 846,489 |
| 2083 | 1,918,005,918 | 41,884,238 | 41,884,238 | - | 726,987 | - | 726,987 |
| 2084 | 2,007,612,510 | 38,138,456 | 38,138,456 | - | 619,070 | - | 619,070 |
| 2085 | 2,107,302,238 | 34,407,868 | 34,407,868 | - | 522,318 | - | 522,318 |
| 2086 | 2,217,758,152 | 30,732,470 | 30,732,470 | - | 436,290 | - | 436,290 |
| 2087 | 2,339,669,278 | 27,154,151 | 27,154,151 | - | 360,507 | - | 360,507 |
| 2088 | 2,473,729,077 | 23,714,942 | 23,714,942 | - | 294,442 | - | 294,442 |
| 2089 | 2,620,635,600 | 20,454,941 | 20,454,941 | - | 237,507 | - | 237,507 |
| 2090 | 2,781,093,814 | 17,410,546 | 17,410,546 | - | 189,057 | - | 189,057 |
| 2091 | 2,955,819,898 | 14,612,432 | 14,612,432 | - | 148,389 | - | 148,389 |
| 2092 | 3,145,547,945 | 12,083,580 | 12,083,580 | - | 114,756 | - | 114,756 |
| 2093 | 3,351,039,155 | 9,838,038 | 9,838,038 | - | 87,375 | - | 87,375 |
| 2094 | 3,573,092,952 | 7,880,295 | 7,880,295 | - | 65,452 | - | 65,452 |
| 2095 | 3,812,559,519 | 6,205,266 | 6,205,266 | - | 48,199 | - | 48,199 |
| 2096 | 4,070,353,217 | 4,799,467 | 4,799,467 | - | 34,864 | - | 34,864 |
| 2097 | 4,347,465,712 | 3,642,753 | 3,642,753 | - | 24,746 | - | 24,746 |
| 2098 | 4,644,978,225 | 2,710,177 | 2,710,177 | - | 17,218 | - | 17,218 |
| 2099 | 4,964,072,704 | 1,974,100 | 1,974,100 | - | 11,729 | - | 11,729 |
| 2100 | 5,306,041,585 | 1,405,966 | 1,405,966 | - | 7,812 | - | 7,812 |
| 2101 | 5,672,296,401 | 977,728 | 977,728 | - | 5,080 | - | 5,080 |
| 2102 | 6,064,375,502 | 662,991 | 662,991 | - | 3,222 | - | 3,222 |
| 2103 | 6,483,951,145 | 437,797 | 437,797 | - | 1,990 | - | 1,990 |
| 2104 | 6,932,836,247 | 281,168 | 281,168 | - | 1,195 | - | 1,195 |
| 2105 | 7,412,991,051 | 175,416 | 175,416 | - | 697 | - | 697 |
| 2106 | 7,926,529,939 | 106,192 | 106,192 | - | 395 | - | 395 |
| 2107 | 8,475,728,653 | 62,315 | 62,315 | - | 217 | - | 217 |
| 2108 | 9,063,032,211 | 35,415 | 35,415 | - | 115 | - | 115 |
| 2109 | 9,691,063,722 | 19,482 | 19,482 | - | 59 | - | 59 |
| 2110 | 10,362,634,292 | 10,374 | 10,374 | - | 29 | - | 29 |
| 2111 | 11,080,754,120 | 5,351 | 5,351 | - | 14 | - | 14 |
| 2112 | 11,848,644,847 | 2,678 | 2,678 | - | 7 | - | 7 |
| 2113 | 12,669,753,167 | 1,302 | 1,302 | - | 3 | - | 3 |
| 2114 | 13,547,765,714 | 618 | 618 | - | 1 | - | 1 |
| 2115 | 14,486,625,239 | 286 | 286 | - | 1 | - | 1 |
| 2116 | 15,490,548,072 | 130 | 130 | - | 0 | - | 0 |
| 2117 | 16,564,042,919 | 58 | 58 | - | 0 | - | 0 |
| 2118 | 17,711,931,034 | 25 | 25 | - | 0 | - | 0 |
| 2119 | 18,939,367,829 | 10 | 10 | - | 0 | - | 0 |
| 2120 | 20,251,866,009 | 4 | 4 | - | 0 | - | 0 |
| 2121 | 21,655,320,319 | 2 | 2 | - | 0 | - | 0 |
| 2122 | 23,156,034,016 | - | - | - | - | - | - |
| | | | | **Totals** | $ 492,309,454 | $ - | $ 492,309,454 |


Projection of Plan Net Position and Benefit Payments
at End of Year
$ [thousands]
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
Year
Projected Plan Net Position
Projected Benefit Payments for Current Members

# SECTION H

## GLOSSARY OF TERMS

# Glossary of Terms

***Accrued Service*** — Service credited under the system which was rendered before the date of the actuarial valuation.

***Actuarial Accrued Liability (AAL)*** — 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."

***Actuarial Assumptions*** — 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.

***Actuarial Equivalent*** — 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.

***Actuarial Cost Method*** — A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method.

***Actuarial Gain (Loss)*** — 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.

***Actuarial Present Value (APV)*** — 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.

***Actuarial Valuation*** — The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.

***Actuarial Valuation Date*** — The date as of which an actuarial valuation is performed.

***Actuarially Determined Contribution (ADC)*** — A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically, the Actuarially Determined Contribution has a normal cost payment and an amortization payment.

# Glossary of Terms

| | |
|---|---|
| ***Amortization Method*** | 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). |
| ***Amortization Payment*** | The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal. |
| ***Cost-of-Living Adjustments (COLA)*** | Postemployment benefit changes intended to adjust benefit payments for the effects of inflation. |
| ***Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)*** | A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan. |
| ***Covered-Employee Payroll*** | The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap. |
| ***Deferred Inflows and Outflows*** | The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources. |
| ***Deferred Retirement Option Program (DROP)*** | A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report. |
| ***Discount Rate*** | 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:<br>1. The benefit payments to be made while the pension plans' fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and<br>2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate. |

# Glossary of Terms

| | |
|---|---|
| ***Entry Age Actuarial Cost Method (EAN)*** | The EAN is a funding 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 value of the assets of the trust. |
| ***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. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. |
| ***Multiple-Employer Defined Benefit Pension Plan*** | A multiple-employer plan is a defined benefit pension plan that is used to provide pensions 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 Pension Liability (Asset) (NPL(A))*** | The NPL(A) is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan. |
| ***Non-Employer Contribution Entities*** | Non-employer contribution entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB Accounting statement plan members are not considered non-employer contribution entities. |
| ***Normal Cost*** | The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method. Also known as service cost. |

# Glossary of Terms

| | |
|---|---|
| ***Other Postemployment Benefits (OPEB)*** | All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other postemployment benefits do not include termination benefits. |
| ***PERSIA*** | Public Employees Retirement System Investment Act. |
| ***POA*** | The 8th Amended Plan for the Adjustment of the Debt of the City of Detroit. |
| ***Real Rate of Return*** | The real rate of return is the rate of return on an investment after adjustment to eliminate inflation. |
| ***Service Cost*** | The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year. Also known as normal cost. |
| ***Single Discount Rate (SDR)*** | The discount rate used in determining the Total Pension Liability. |
| ***Total Pension Expense*** | The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year:<br><br>1. Service Cost<br>2. Interest on the Total Pension Liability<br>3. Current-Period Benefit Changes<br>4. Employee Contributions (made negative for addition here)<br>5. Projected Earnings on Plan Investments (made negative for addition here)<br>6. Pension Plan Administrative Expense<br>7. Other Changes in Plan Fiduciary Net Position<br>8. Recognition of Outflow (Inflow) of Resources due to Liabilities<br>9. Recognition of Outflow (Inflow) of Resources due to Assets |
| ***Total Pension Liability (TPL)*** | The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service. |
| ***Unfunded Actuarial Accrued Liability (UAAL)*** | The UAAL is the difference between actuarial accrued liability and valuation assets. |
| ***Valuation Assets*** | The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of the GASB Statement No. 67, the valuation asset is equal to the market value of assets. |
| ***Variable Pension Improvement Factor (VPIF)*** | An increase on the Component I Retirement Allowance of 1% compound subject to plan restrictions. |

# APPENDIX

## MICHIGAN PUBLIC ACT 202

# State Reporting Assumptions for Fiscal Year 2022
# Calculations as of June 30, 2021

The Protecting Local Government Retirement and Benefits Act, Public Act 202 of 2017, was put into law effective December 20, 2017. One outcome of the law is the requirement for the local unit of government to provide select reporting disclosures to the State. Sec. 5(1) of the Act provides the State treasurer with the authority to annually establish uniform actuarial assumptions for purposes of developing the requisite disclosures. Below you will find information which may be used to assist the local unit of government with required reporting.

Uniform Assumptions, as applicable to the measurement and the required disclosures under uniform assumptions are denoted below. Additional discussion of PA 202 and uniform assumptions published for Fiscal Year 2022 reporting may be found on the State website in the uniform assumptions memo dated December 17, 2021.

| | PA 202 | Assumptions Used for GASB | Uniform Assumptions Used |
|---|---|---|---|
| Investment Rate of Return Discount Rate | **Maximum of 6.85%^** | 6.88% | **6.85%^** |
| Salary Increase | Minimum of 3.00% or based on experience study within last 5 years | **3.00% + Merit and seniority based on the 2015-2020 Experience Study** | **3.00% + Merit and seniority based on the 2015-2020 Experience Study** |
| Mortality | Version of Pub-2010 with future mortality improvement projected generationally using Scale MP-2020 or based on experience study within last 5 years | **Version of Pub-2010 with future mortality improvement projected generationally using Scale MP-2021 based on the 2015-2020 Experience Study** | **Version of Pub-2010 with future mortality improvement projected generationally using Scale MP-2021 based on the 2015-2020 Experience Study** |
| Amortization of the Unfunded Accrued Actuarial Liability: Period | **Maximum Period of 17 Years** | N/A | **17 years** |
| Method | **Closed Plans: Level Dollar Open Plans: Level Percent of Payroll or Level Dollar** | Other | **Level Percent** |

^ *A blended rate calculated using GASB 68 methodology. For periods in which projected plan assets are sufficient to make projected benefit payments – maximum of 6.85%; for periods in which projected plan assets are NOT sufficient to make projected benefit payments – 2.16%.*

With the exception of the assumptions and methods listed above, all other assumptions and methods are the same as those listed in the June 30, 2022 GASB report which has a valuation date of June 30, 2021. In particular, the attribution period for the normal cost was based on the GASB method. The 6.88% Investment Rate of Return was provided to us to be used for calculations performed for GASB reporting purposes with a measurement date of June 30, 2021, the same measurement date as the PA 202 calculations.

# State Reporting for Fiscal Year 2022
# Calculations as of June 30, 2021

The following information has been prepared to provide some of the information necessary to complete the pension reporting requirements for the State of Michigan's Local Government Retirement System Annual Report (Form 5572). The local unit of government is required to complete/develop all of the remaining reporting requirements necessary for Form 5572. Additional resources are available on the State website.

| Line | Descriptive Information | | |
|---|---|---|---|
| **18** | **Actuarial Assumptions** | | |
| 19 | Actuarial assumed Rate of Investment Return | | 6.75% |
| 20 | Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any | | Other |
| 21 | Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any | | N/A |
| 22 | Is each division within the system closed to new employees? ~ | | no |
| **23** | **Uniform Assumptions^** | | |
| 24 | Enter retirement pension system's actuarial value of assets using uniform assumptions+ | $ | 258,494,103.00 |
| 25 | Enter retirement pension system's actuarial accrued liabilities using uniform assumptions | $ | 209,634,526.00 |
| 26 | Funded ratio using uniform assumptions | | 123.3% |
| 27 | Actuarially Determined Contribution (ADC) using uniform assumptions | $ | 17,005,460.00 |
| 28 | All systems combined ADC/Governmental fund revenues | | Auto* |

^ *Information on lines 24-28 is based on the Uniform Assumptions used, listed on the prior page, as of the most recent valuation date, June 30, 2021.*

\+ *The actuarial value of assets is equal to the market value of assets as of June 30, 2021.*

* *Automatically calculated by State of Michigan Form 5572.*

~ *This Component I plan is open to new employees. The Component II plan is closed to new employees and its PA 202 information is in the Component II GASB No. 68 report.*

800.521.0498 | P: 248.799.9000 | www.grsconsulting.com

October 31, 2022

Mr. David Cetlinski
Executive Director
The Police and Fire Retirement System of the
City of Detroit
One Detroit Center
500 Woodward Avenue, Suite 3000
Detroit, Michigan 48226-3534

Dear Mr. Cetlinski:

Please find enclosed 30 copies of the Component I GASB Statement Nos. 67 and 68 report of the Police and Fire Retirement System of the City of Detroit.

Sincerely,
Gabriel, Roeder, Smith & Company

Jamal Adora, ASA, EA, MAAA

JA:rmn
Enclosure

cc: Gail Oxendine, City of Detroit Retirement Systems
Kelly Tapper, City of Detroit Retirement Systems
Judith A. Kermans, GRS
James R. Sparks, GRS

One Towne Square | Suite 800 | Southfield, Michigan 48076-3723

# The Police and Fire Retirement System of the City of Detroit

## GASB Statement Nos. 67 and 68 Accounting and Financial Reporting for Pension Plans of Component II

June 30, 2022

800.521.0498 | P: 248.799.9000 | www.grsconsulting.com

October 27, 2022

Board of Trustees
The Police and Fire Retirement System
of the City of Detroit

Dear Board Members:

This report provides information required for the Police and Fire Retirement System of the City of Detroit in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67 "Financial Reporting for Pension Plans" and No. 68 "Employer Reporting for Pension Plans." These calculations have been made on a basis that is consistent with our understanding of these Statements. This information is subject to a review by the City's and the System's Auditor. Please let us know if the City's or the System's Auditor recommends any changes. This report covers the Police and Fire Retirement System Plan known as Component II (also known as the Legacy Plan). Since Component I is a separate plan, it is detailed in a separate report.

Our 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. 67 and 68. The calculation of the plan's liability for this report is not applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The Appendix of this report also provides some of the information necessary to complete the reporting requirements for the State of Michigan's Local Government Retirement System Annual Report (Form 5572). This information is not required to be included in your financial statements. The calculations in the Appendix are based on assumptions that satisfy the Uniform Assumptions criteria published by the Michigan Treasury for Fiscal Year 2022 reporting requirements.

This report is based upon information, furnished to us by the System staff, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This report is based on the valuation date of June 30, 2021. The total pension liability was rolled-forward from the valuation date to the plan year ending June 30, 2022 using generally accepted actuarial principles. The asset information as of June 30, 2022 was provided by the System. This information was checked for internal consistency, but it was not audited by GRS. A description of the adjustments made to the data is included in this report (either directly or by reference). GRS is not responsible for any data received for the purposes of completing this report, including any member or financial data. As discussed in the June 30, 2021 funding valuation report, certain data was not available in time to produce the results in that report and it was necessary for us to use approximations. Please see the related discussion in the Comments section as well as the Data section of that report.

At the direction of the System and with approval of the System's Auditor, the long-term expected return on assets used to determine the discount rate was changed to 6.93% as of June 30, 2022, from 6.88% as of June 30, 2021. We have reviewed this assumption based on the System's asset allocation and have determined it does not significantly conflict with what, in our professional judgment, would be reasonable for purposes of the measurement.

The benefit provisions reflected in this valuation for the development of the end of year Total Pension Liability (TPL) are those in effect for Component II as of the end of the plan year on June 30, 2022.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the System on the measurement date for purposes of GASB Statement Nos. 67 and 68 reporting. All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

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.

The signing actuaries are independent of the plan sponsor.

Jamal Adora, Judith A. Kermans, and James R. Sparks 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.

Respectfully submitted,
Gabriel, Roeder, Smith & Company

Jamal Adora, ASA, EA, MAAA
Consultant

Judith A. Kermans, EA, FCA, MAAA
Senior Consultant and President

James R. Sparks, ASA, FCA, MAAA
Consultant

JA/JAK/JRS:rmn

# Table of Contents

# SECTION A

## EXECUTIVE SUMMARY

# Executive Summary
# as of June 30, 2022

| | |
|---|---|
| Actuarial Valuation Date | June 30, 2021 |
| Measurement Date of the Net Pension Liability | June 30, 2022 |
| Employer's Fiscal Year Ending Date (GASB No. 68 Reporting Date) | June 30, 2023 |

| | |
|---|---|
| **Membership** | |
| Number of | |
| - Retirees and Beneficiaries | 7,823 |
| - DROP Members | 728 |
| - Post-2014 Pre-Conversion Duty Disability | 81 |
| - Inactive, Nonretired Members | 385 |
| - Active Members | 1,234 |
| - Total | 10,251 |
| Covered Payroll^ | $ 64,314,961 |
| **Net Pension Liability** | |
| Total Pension Liability | $ 3,205,964,135 |
| Plan Fiduciary Net Position | 2,442,114,254 |
| Net Pension Liability | $ 763,849,881 |
| Plan Fiduciary Net Position as a Percentage of Total Pension Liability | 76.17% |
| Net Pension Liability as a Percentage of Covered Payroll | 1,187.67% |
| **Development of the Single Discount Rate** | |
| Single Discount Rate | 6.93% |
| Long-Term Expected Rate of Investment Return | 6.93% |
| Long-Term Municipal Bond Rate* | 3.69% |
| Last year ending June 30 in the 2023 to 2122 projection period for which projected benefit payments are fully funded | 2122 |
| **Total Pension Expense** | $ (277,932,524) |

**Deferred Outflows and Deferred Inflows of Resources by Source to be Recognized in Future Pension Expenses**

| | Deferred Outflows of Resources | Deferred Inflows of Resources |
|---|---|---|
| Difference between expected and actual experience | $ - | $ - |
| Changes in assumptions | - | - |
| Net difference between projected and actual earnings on pension plan investments | 244,127,703 | 271,456,970 |
| Total | $ 244,127,703 | $ 271,456,970 |

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

*^Based on the June 30, 2021 census data. Excludes DROP covered payroll. Covered employee payroll for employer's disclosure may differ.*

# Discussion

## Changes Compared to Funding Valuation

For purposes of determining the Total Pension Liability (TPL) as of June 30, 2022, we note the following differences from the June 30, 2021 funding valuation:

- At the direction of the System and approval of the Systems' Auditor, the long-term expected return on assets was 6.93% as of June 30, 2022. It was 6.75% in the June 30, 2021 funding valuation, as required by the Plan of Adjustment.
- The excess of the Annuity Reserve Fund (ARF) over the related accrued liabilities was not included as a liability in this report (see "Contingency Reserve" comment on page 7).
- The funding valuation includes a liability for excess Annuity Savings Fund (ASF) earnings that are expected to be transferred to Component I after the valuation date. In accordance with the Plan's Auditor's prior instructions, excess Annuity Savings Fund (ASF) earnings that are expected to be transferred to Component I after the valuation date are not reflected in the TPL and will be reflected in the assets, once it occurs. Based on the return for the 2020 and 2021 fiscal year, the June 30, 2021 funding valuation included $9,764,892 in liabilities to account for this activity.

## Changes Compared to Prior Year's GASB Report

The changes in actuarial assumptions compared to the June 30, 2021 GASB No. 68 reporting were:

- The change in the long-term expected rate of investment return from 6.88% to 6.93%.
- Other economic and demographic assumptions were updated in conjunction with the 2015-2020 Experience Study.

These assumption changes decreased the TPL by $275.5 million resulting in a new deferred inflow for recognition in the pension expense.

We understand that new DROP plan provisions are in effect as of the measurement date. The new provisions allow Detroit Police Lieutenants and Sergeants Association (DPLSA) members to participate in the DROP program for a maximum of 15 years, up from the prior maximum of ten (10) years. We modeled this change by changing the DROP assumptions for this group. The assumptions we used were based on our analysis in the Experience Study. For eligible DPLSA members, it was assumed that 75% (up from 65%) of members would DROP and would stay in DROP for an average of nine (9) years (up from seven (7) years). The change in the DROP provision combined with the corresponding change in the DROP assumption resulted in a $2.4 million decrease in the TPL.

# Discussion

## Accounting Standard

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

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

## Financial Statements

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

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

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

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

# Discussion

## Notes to Financial Statements

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

Both GASB Statements No. 67 and No. 68 require the notes of the financial statements for the employers and pension plans to include certain additional information. The list of disclosure items should include:

- A description of the types of benefits provided by the plan, as well as automatic or ad hoc colas;
- The number and classes of employees covered by the benefit terms;
- For the current year, sources of changes in the net pension liability;
- Significant assumptions and methods used to calculate the total pension liability;
- Inputs to the Single Discount Rate;
- Certain information about mortality assumptions and the dates of experience studies;
- The date of the valuation used to determine the total pension liability;
- Information about changes of assumptions or other inputs and benefit terms;
- The basis for determining contributions to the plan, including a description of the plan's funding policy, as well as member and employer contribution requirements;
- The total pension liability, fiduciary net position, net pension liability, and the pension plan's fiduciary net position as a percentage of the total pension liability;
- The net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- A description of the system that administers the pension plan; and
- A description of the terms of the plan's Deferred Retirement Option Program (DROP) and the total DROP balance for those members currently participating in the DROP. ***Current DROP balances for members of this plan are not available and are not included. These balances are also excluded from the reported assets.***

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

- The composition of the pension plan's Board and the authority under which benefit terms may be amended;
- The pension plan's investment policies;
- The portion of present value of benefits to be provided through the pension plan to current active and inactive plan members;
- A description of how fair value is determined; and
- 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.

# Discussion

## Required Supplementary Information

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

- Sources of changes in the net pension liability;
- Information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll;
- Comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy; and
- The annual money-weighted rate of return on pension plan investments for each year.

While the first two tables may be built prospectively as the information becomes available, sufficient information may currently be available for the third table from prior financial statements.

## Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. For the employer's financial reporting purposes, the net pension liability and pension 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 pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The total pension liability shown in this report is based on an actuarial valuation performed as of June 30, 2021 rolled-forward to the plan year end of June 30, 2022.

## Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a Single Discount Rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) 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 pension plan investments is 6.93%; the municipal bond rate is 3.69% (based on the "20-Year Municipal GO AA Index" from the Fidelity Index); and the resulting Single Discount Rate is 6.93% as of June 30, 2022.

The projection of contributions used to determine this Single Discount Rate reflect that plan member contributions have ceased and that employer contributions will be made at rates equal to those set by the final Plan of Adjustment through June 30, 2023 and the Board-adopted Funding Policy thereafter. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. We have also determined that under a 30-year closed level dollar amortization, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members.

# Discussion

Therefore, the long-term expected rate of return on pension plan investments of 6.93% was applied to all periods of projected benefit payments to determine the total pension liability. Note projections are shown with a 6.93% investment return (the current long-term expected rate provided by the Retirement System).

Note the projections show assets continuing to grow after the satisfaction of liabilities. This is a byproduct of the way in which the Contingency Reserve (the excess of ARF over annuity liabilities) is handled in the valuation. See the Contingency Reserve comment for additional details.

## Limitation of Assets as a Percent of Total Pension Liability Measurements

This report includes a measure of the plan fiduciary net position as a percent of total pension liability (76.17% as of June 30, 2022). Unless otherwise indicated, with regard to any such measurements presented in this report:

(1) This measurement is not intended to be a funded ratio or a measure of funded progress.
(2) This measurement is inappropriate for assessing the sufficiency of Plan assets to cover the estimated cost of settling the Plan's benefit obligations.
(3) The measurement is inappropriate for assessing the need for or amount of future employer contributions.

## Limitations of Project Scope

Actuarial Standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entities to make required contributions when due. Such an evaluation was not within the scope of this project and is not within our area of expertise. Consequently, we have not made such an evaluation.

## Plan

The Police and Fire Retirement System has two components. It is our understanding that Component I and Component II are separate plans and the assets from one plan cannot be used to satisfy the liabilities of the other, even though assets may be pooled for investment purposes and transfers may be required by the plan document in certain circumstances. Therefore, this report only includes the liabilities and reported assets of Component II. The liabilities and reported assets of Component I will be detailed in a separate report.

# Discussion

## Contingency Reserve

Historically, the Retirement Board has included a contingency reserve in the development of the accrued liabilities equal to the difference between the annuity liabilities and the Annuity Reserve Fund (when the Annuity Reserve Fund exceeds the annuity liabilities). Neither GASB Statements No. 67 nor 68 seem to address this situation directly. However, question 23 of the GASB Statement No. 67 implementation guide addresses a closely related issue. Based on that guidance, we believe the TPL should not include the Contingency Reserve and have, therefore, removed it.

The Contingency Reserve may still need to be disclosed in accordance with paragraph 30(e) of GASB Statement No. 67. If so, the amount of the reserve was $27,147,001 in the June 30, 2021 valuation. The projections in Section G show the Net Plan Position as of June 30, 2022 with and without the remaining contingency reserve. If the contingency reserve is removed from the liabilities and those assets are never to be paid out, they will continue to grow with interest.

## Liabilities Related to Restoration and the Restoration Reserve Account

Section K-3 (Restoration of Pension Benefits) of the Combined Plan, provides that restored COLA benefits may be paid under certain circumstances. In particular, restored COLA benefits are paid out of the Restoration Reserve Account (RRA) the balance of which depends on the Plan's funded status. Accordingly, we have estimated the liabilities related to restoration by setting the liabilities equal to the projected value of the RRA following required transfers that recognize experience up to the measurement date. The estimated result as of June 30, 2022 is $0 of liabilities related to the RRA. Detail of the estimate of the RRA following required transfers is included below and on the following page. Note that this estimate was performed using a 6.75% rate of investment return. These calculations differ from those performed as of June 30, 2021 regarding the RRA as they reflect asset experience through the measurement date of June 30, 2022.

**($ Millions)**

| | Actuarial Accrued Liability (AAL) (A) | Market Value of Assets (MVA), net of RRA (B) | Funded Ratio (C) = (B) / (A) |
|---|---|---|---|
| (1) Value on June 30, 2021 | $ 3,374.9 | | |
| (2) Contributions - Fiscal Year (FY) 2022 | N/A | | |
| (3) Expected Benefit Payments and Refunds - FY 2022 | (299.3) | | |
| (4) Interest - FY 2022* | 217.9 | | |
| (5) Value on June 30, 2022 (1)+(2)+(3)+(4) | $ 3,293.5 | $ 2,415.9 | |
| (6) Contributions - FY 2023 | N/A | 18.3 | |
| (7) Expected Benefit Payments and Refunds - FY 2023 | (298.5) | (298.5) | |
| (8) Interest - FY 2023* | 212.4 | 153.2 | |
| (9) Value on June 30, 2023 (5)+(6)+(7)+(8) | $ 3,207.3 | $ 2,288.8 | **71.4%** |

* *Employer contributions are assumed to occur at the end of the year. Expected benefit payments and refunds are assumed to occur mid-year.*

**Calculation of Notional Credit to RRA Needed to Satisfy the Restoration Target**

| | | ($ Millions) |
|---|---|---|
| (1) | June 30, 2023 Restoration Target | 78% |
| (2) | June 30, 2023 AAL | $ 3,207.3 |
| (3) | June 30, 2023 Projected Target MVA (1)x(2) | $ 2,501.7 |
| (4) | June 30, 2023 Projected MVA | 2,288.8 |
| (5) | Projected MVA excess over target (4)-(3), not less than 0 | $ - |
| (6) | Discount factor to June 30, 2021 | 0.9368 |
| (7) | June 30, 2022 value of excess (5)x(6) | **$ -** |

**Calculation of Notional Transfer from RRA Needed to Satisfy the Funding Target**

| | | ($ Millions) |
|---|---|---|
| (1) | June 30, 2023 Funding Target | 75% |
| (2) | June 30, 2023 AAL | $ 3,207.3 |
| (3) | June 30, 2023 Projected Target MVA (1)x(2) | $ 2,405.5 |
| (4) | June 30, 2023 Projected MVA | 2,288.8 |
| (5) | Projected MVA deficit over target (3)-(4), not less than 0 | $ 116.7 |
| (6) | Discount factor to June 30, 2022 | 0.9368 |
| (7) | June 30, 2022 value of deficit (5)x(6) | $ 109.3 |
| (8) | June 30, 2022 Restoration Reserve Account | 26.2 |
| (9) | Funds to Transfer from RRA to PRF (7)-(8), not less than 0 or more than (8) | **$ 26.2** |
| (10) | Remaining Funds in RRA (8)-(9) | **$ -** |

**Additional Notes:**

The Restoration Reserve Account (RRA) was established as of June 30, 2021 with a balance of $26.5 million. Based on the updated MVA and Section K.(2)e of the Combined Plan, the RRA 's entire balance of $26.2 million (including interest credits to June 30, 2022) would need to be transferred to the Pension Reserve Fund in an effort to restore the June 30, 2023 funded ratio to 75% (the Funding Target). Therefore, the RRA and associated liability in this report has a balance of $0.

# SECTION B

## FINANCIAL STATEMENTS

This information is subject to review by the City's and the System's Auditor.  Please let us know if there are any recommended changes.

# Statement of Fiduciary Net Position
# as of June 30, 2022

| | | |
|---|---|---|
| **Assets** | | |
| Cash and Cash Equivalents | $ | 37,340,899 |
| Receivables | $ | 57,361,527 |
| Investments | | |
| Investments at Fair Value | $ | 2,400,003,079 |
| Cash and Investments held as Collateral for Securities Lending | | 109,712,412 |
| Capital Assets - Net | | 3,802,915 |
| Total Investments | $ | 2,513,518,406 |
| **Total Assets** | $ | 2,608,220,832 |
| **Liabilities** | | |
| Payables | | |
| Accounts Payable | $ | 166,106,578 |
| **Total Liabilities** | $ | 166,106,578 |
| **Net Position Restricted for Pensions** | $ | 2,442,114,254 |

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

| | | |
|---|---|---|
| **Additions** | | |
| Contributions | | |
| Employer | $ | 18,300,000 |
| Employee | | - |
| Other | | - |
| Total Contributions | $ | 18,300,000 |
| Investment Income | | |
| Investment Income - Net | $ | (28,127,461) |
| Annuity Interest | | 1,453,796 |
| Annuity Loan Interest | | 247,874 |
| Total Investment Income | $ | (26,425,791) |
| Other | $ | 786,317 |
| **Total Additions** | $ | (7,339,474) |
| **Deductions** | | |
| Benefit Payments, including Refunds of Employee Contributions | $ | 297,137,096 |
| Pension Plan Administrative Expense | | 2,482,715 |
| Transfers Out | | - |
| **Total Deductions** | $ | 299,619,811 |
| **Net Increase in Net Position** | $ | (306,959,285) |
| **Net Position Restricted for Pensions** | | |
| Beginning of Year | $ | 2,749,073,539 |
| End of Year | $ | 2,442,114,254 |

# Statement of Pension Expense Under GASB Statement No. 68
# Fiscal Year Ended June 30, 2022

| | |
|---|---|
| **A. Expense** | |
| 1. Service Cost | $ - |
| 2. Interest on the Total Pension Liability | 237,148,881 |
| 3. Current-Period Benefit Changes | (2,370,648) |
| 4. Employee Contributions (made negative for addition here) | - |
| 5. Projected Earnings on Plan Investments (made negative for addition here) | (179,485,907) |
| 6. Pension Plan Administrative Expense | 2,482,715 |
| 7. Other Changes in Plan Fiduciary Net Position | (786,317) |
| 8. Recognition of Outflow (Inflow) of Resources due to Liabilities | (327,176,960) |
| 9. Recognition of Outflow (Inflow) of Resources due to Assets | (7,744,288) |
| **10. Total Pension Expense** | **$ (277,932,524)** |

# Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended June 30, 2022

| | |
|---|---|
| **A. Outflows (Inflows) of Resources due to Liabilities** | |
| 1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses | $ (51,650,288) |
| 2. Assumption Changes (gains) or losses | $ (275,526,672) |
| 3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}* | 1.0000 |
| 4. Outflow (Inflow) of Resources to be recognized in the current pension expense for the difference between expected and actual experience of the Total Pension Liability | $ (51,650,288) |
| 5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes | $ (275,526,672) |
| 6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities | $ (327,176,960) |
| 7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability | $ - |
| 8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes | $ - |
| 9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities | $ - |
| **B. Outflows (Inflows) of Resources due to Assets** | |
| 1. Net difference between projected and actual earnings on pension plan investments (gains) or losses | $ 205,911,698 |
| 2. Recognition period for Assets {in years} | 5.0000 |
| 3. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Assets | $ 41,182,340 |
| 4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets | $ 164,729,358 |

* *A 1-year period (immediate recognition) is used, since the Plan is closed and no benefits are accruing and, therefore, future participation service is zero.*

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

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

| | Outflows of Resources | Inflows of Resources | Net Outflows of Resources |
|---|---|---|---|
| 1. Due to Liabilities | $ - | $ 327,176,960 | $ (327,176,960) |
| 2. Due to Assets | 90,542,853 | 98,287,141 | (7,744,288) |
| **3. Total** | $ 90,542,853 | $ 425,464,101 | $ (334,921,248) |

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

| | Outflows of Resources | Inflows of Resources | Net Outflows of Resources |
|---|---|---|---|
| 1. Differences between expected and actual experience | $ - | $ 51,650,288 | $ (51,650,288) |
| 2. Assumption Changes | - | 275,526,672 | (275,526,672) |
| 3. Net Difference between projected and actual earnings on pension plan investments | 90,542,853 | 98,287,141 | (7,744,288) |
| **4. Total** | $ 90,542,853 | $ 425,464,101 | $ (334,921,248) |

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

| | Deferred Outflows of Resources | Deferred Inflows of Resources | Net Deferred Outflows of Resources |
|---|---|---|---|
| 1. Differences between expected and actual experience | $ - | $ - | $ - |
| 2. Assumption Changes | - | - | - |
| 3. Net Difference between projected and actual earnings on pension plan investments | 244,127,703 | 271,456,970 | (27,329,267) |
| **4. Total** | $ 244,127,703 | $ 271,456,970 | $ (27,329,267) |

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

| Year Ending June 30 | Net Deferred Outflows of Resources |
|---|---|
| 2023 | $ 57,194 |
| 2024 | (19,265,483) |
| 2025 | (49,303,316) |
| 2026 | 41,182,338 |
| 2027 | - |
| Thereafter | - |
| **Total** | $ (27,329,267) |

# Recognition of Deferred Outflows and Inflows of Resources
# Fiscal Year Ended June 30, 2022

| Year Established | Initial Amount | Initial Recognition Period | Current Year Recognition | Remaining Recognition | Remaining Recognition Period |
|---|---|---|---|---|---|
| **Deferred Outflow (Inflow) due to Differences Between Expected and Actual Experience on Liabilities** | | | | | |
| 2022 | $ (51,650,288) | 1.0000 | $ (51,650,288) | 0 | 0.0000 |
| **Total** | | | **$ (51,650,288)** | **$ 0** | |
| **Deferred Outflow (Inflow) due to Assumption Changes** | | | | | |
| 2022 | $ (275,526,672) | 1.0000 | $ (275,526,672) | 0 | 0.0000 |
| **Total** | | | **$ (275,526,672)** | **$ 0** | |
| **Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments** | | | | | |
| 2018 | $ (39,007,424) | 5.0000 | $ (7,801,484) | $ 0 | 0.0000 |
| 2019 | 96,613,383 | 5.0000 | 19,322,677 | 19,322,675 | 1.0000 |
| 2020 | 150,189,178 | 5.0000 | 30,037,836 | 60,075,670 | 2.0000 |
| 2021 | (452,428,284) | 5.0000 | (90,485,657) | (271,456,970) | 3.0000 |
| 2022 | 205,911,698 | 5.0000 | 41,182,340 | 164,729,358 | 4.0000 |
| **Total** | | | **$ (7,744,288)** | **$ (27,329,267)** | |

# SECTION C

## REQUIRED SUPPLEMENTARY INFORMATION

# Schedule of Changes in Net Pension Liability and Related Ratios
# Current Period
# Fiscal Year Ended June 30, 2022

| | | |
|---|---|---|
| **A. Total pension liability** | | |
| 1. Service Cost | $ | - |
| 2. Interest on the Total Pension Liability | | 237,148,881 |
| 3. Changes of benefit terms | | (2,370,648) |
| 4. Difference between expected and actual experience of the Total Pension Liability | | (51,650,288) |
| 5. Changes of assumptions | | (275,526,672) |
| 6. Benefit payments, including refunds of employee contributions | | (297,137,096) |
| 7. Net change in total pension liability | $ | (389,535,823) |
| 8. Total pension liability – beginning | | 3,595,499,958 |
| 9. Total pension liability – ending | **$** | **3,205,964,135** |
| **B. Plan fiduciary net position** | | |
| 1. Contributions – employer | $ | 18,300,000 |
| 2. Contributions – employee | | - |
| 3. Net investment income | | (26,425,791) |
| 4. Benefit payments, including refunds of employee contributions | | (297,137,096) |
| 5. Pension plan administrative expense | | (2,482,715) |
| 6. Other | | 786,317 |
| 7. Net change in plan fiduciary net position | $ | (306,959,285) |
| 8. Plan fiduciary net position – beginning | | 2,749,073,539 |
| 9. Plan fiduciary net position – ending | **$** | **2,442,114,254** |
| **C. Net pension liability** | **$** | **763,849,881** |
| **D. Plan fiduciary net position as a percentage of the total pension liability** | | **76.17%** |
| **E. Covered-employee payroll** | **$** | **64,314,961** |
| **F. Net pension liability as a percentage of covered-employee payroll** | | **1,187.67%** |

A special funding situation may occur if a non-city entity has a legal obligation to contribute directly to the Retirement System. The Net Pension Liability shown here has not been adjusted for any potential special funding situation. Our understanding is that the City makes all the employer contributions into the fund, even though the City may receive monies from other entities as a result of the POA.

# Schedules of Required Supplementary Information

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

**Ultimately 10 Fiscal Years will be Displayed**

| Fiscal year ending June 30, | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 |
|---|---|---|---|---|---|---|---|---|---|
| **Total Pension Liability** | | | | | | | | | |
| Service Cost | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 34,967,708 |
| Interest on the Total Pension Liability | 237,148,881 | 248,397,228 | 253,048,801 | 256,873,504 | 257,841,119 | 261,449,503 | 264,233,822 | 306,063,331 | 304,737,368 |
| Benefit Changes | (2,370,648) | - | (4,490,368) | (3,111,623) | - | - | - | (555,898,068) | (102,236,878) |
| Difference between Expected and Actual Experience | (51,650,288) | (63,747,219) | (6,362,993) | (3,862,962) | 32,674,674 | (10,648,606) | 45,955,554 | (59,621,651) | - |
| Assumption Changes* | (275,526,672) | 87,209,168 | 13,171,037 | - | (6,975,457) | (4,082,068) | 114,463,362 | (95,014,469) | 540,356,835 |
| Benefit Payments | (280,872,134) | (284,426,216) | (286,551,161) | (286,557,514) | (288,443,573) | (286,667,369) | (285,936,674) | (313,816,916) | (285,512,629) |
| Refunds | (16,264,962) | (16,466,441) | (14,024,530) | (19,054,169) | (19,947,151) | (19,431,502) | (18,530,489) | - | (38,027,844) |
| **Net Change in Total Pension Liability** | (389,535,823) | (29,033,480) | (45,209,214) | (55,712,764) | (24,850,388) | (59,380,042) | 120,185,575 | (718,287,774) | 454,284,561 |
| **Total Pension Liability - Beginning** | 3,595,499,958 | 3,624,533,438 | 3,669,742,652 | 3,725,455,416 | 3,750,305,804 | 3,809,685,846 | 3,689,500,271 | 4,407,788,045 | 3,953,503,484 |
| **Total Pension Liability - Ending (a)** | $ 3,205,964,135 | $ 3,595,499,958 | $ 3,624,533,438 | $ 3,669,742,652 | $ 3,725,455,416 | $ 3,750,305,804 | $ 3,809,685,846 | $ 3,689,500,271 | $ 4,407,788,045 |
| **Plan Fiduciary Net Position** | | | | | | | | | |
| Employer Contributions | $ 18,300,000 | $ 18,300,000 | $ 18,300,000 | $ 18,300,000 | $ 18,300,000 | $ 18,300,000 | $ 37,787,744 | $ 114,300,000 | $ - |
| Employee Contributions | - | - | - | 3,600 | 42,114 | 14,055 | 24,801 | 42,576 | 7,783,141 |
| Pension Plan Net Investment Income | (26,425,791) | 615,133,270 | 31,591,980 | 98,891,894 | 237,991,220 | 282,398,412 | 24,649,809 | 122,736,820 | 568,760,793 |
| Benefit Payments | (280,872,134) | (284,426,216) | (286,551,161) | (286,557,514) | (288,443,573) | (286,667,369) | (285,936,673) | (313,816,916) | (285,512,629) |
| Refunds | (16,264,962) | (16,466,441) | (14,024,530) | (19,054,169) | (19,947,151) | (19,431,502) | (18,530,489) | - | (38,027,844) |
| Pension Plan Administrative Expense | (2,482,715) | (1,970,846) | (2,449,246) | (3,180,514) | (4,933,928) | (4,433,657) | (3,103,694) | (7,630,692) | (11,373,226) |
| Other | 786,317 | 1,255,632 | (462,259) | (3,863,746) | 1,153,145 | (18,508,411) | 824,511 | 2,919,354 | - |
| **Net Change in Plan Fiduciary Net Position** | (306,959,285) | 331,825,399 | (253,595,216) | (195,460,449) | (55,838,173) | (28,328,472) | (244,283,991) | (81,448,858) | 241,630,235 |
| **Plan Fiduciary Net Position - Beginning** | 2,749,073,539 | 2,417,248,140 | 2,670,843,356 | 2,866,303,805 | 2,922,141,978 | 2,950,470,450 | 3,194,754,441 | 3,276,203,299 | 3,034,573,064 |
| **Plan Fiduciary Net Position - Ending (b)** | $ 2,442,114,254 | $ 2,749,073,539 | $ 2,417,248,140 | $ 2,670,843,356 | $ 2,866,303,805 | $ 2,922,141,978 | $ 2,950,470,450 | $ 3,194,754,441 | $ 3,276,203,299 |
| **Net Pension Liability - Ending (a) - (b)** | 763,849,881 | 846,426,419 | 1,207,285,298 | 998,899,296 | 859,151,611 | 828,163,826 | 859,215,396 | 494,745,830 | 1,131,584,746 |
| **Plan Fiduciary Net Position as a Percentage of Total Pension Liability** | 76.17 % | 76.46 % | 66.69 % | 72.78 % | 76.94 % | 77.92 % | 77.45 % | 86.59 % | 74.33 % |
| **Covered Employee Payroll (excluding DROP)** | $ 64,314,961 | $ 71,842,120 | $ 105,233,078 | $ 111,407,220 | $ 116,288,356 | $ 126,865,176 | $ 134,758,956 | $ 132,566,687 | $ 150,176,596 |
| **Net Pension Liability as a Percentage of Covered Employee Payroll** | 1,187.67 % | 1,178.18 % | 1,147.25 % | 896.62 % | 738.81 % | 652.79 % | 637.59 % | 373.21 % | 753.50 % |

**Notes to Schedule:**

* *For the fiscal years ending 2016, 2017, 2018, 2020, and 2021, the “Assumption Changes” item only includes the effect of the change in the SDR. All other changes to the actuarial assumptions and methods are included in the “Difference between Expected and Actual Experience” line or the “Benefit Changes” line. Fiscal Year ending 2022 “Assumption Changes” item includes the effect of the change in the SDR along with other assumptions updated in conjunction with the 2015-2022 Experience Study.*

A special funding situation may occur if a non-city entity has a legal obligation to contribute directly to the Retirement System. The Net Pension Liability shown here has not been adjusted for any potential special funding situation. Our understanding is that the City makes all the employer contributions into the fund, even though the City may receive monies from other entities as a result of the POA.

# Schedules of Required Supplementary Information
# Schedule of the Net Pension Liability Multiyear

**Ultimately 10 Fiscal Years will be Displayed**

| FY Ending June 30, | Total Pension Liability | Plan Net Position | Net Pension Liability | Plan Net Position as a % of Total Pension Liability | Covered Payroll* | Net Pension Liability as a % of Covered Payroll |
|---|---|---|---|---|---|---|
| 2014 | $ 4,407,788,045 | $ 3,276,203,299 | $ 1,131,584,746 | 74.33% | $ 150,176,596 | 753.50% |
| 2015 | 3,689,500,271 | 3,194,754,441 | 494,745,830 | 86.59% | 132,566,687 | 373.21% |
| 2016 | 3,809,685,846 | 2,950,470,450 | 859,215,396 | 77.45% | 134,758,956 | 637.59% |
| 2017 | 3,750,305,804 | 2,922,141,978 | 828,163,826 | 77.92% | 126,865,176 | 652.79% |
| 2018 | 3,725,455,416 | 2,866,303,805 | 859,151,611 | 76.94% | 116,288,356 | 738.81% |
| 2019 | 3,669,742,652 | 2,670,843,356 | 998,899,296 | 72.78% | 111,407,220 | 896.62% |
| 2020 | 3,624,533,438 | 2,417,248,140 | 1,207,285,298 | 66.69% | 105,233,078 | 1,147.25% |
| 2021 | 3,595,499,958 | 2,749,073,539 | 846,426,419 | 76.46% | 71,842,120 | 1,178.18% |
| 2022 | 3,205,964,135 | 2,442,114,254 | 763,849,881 | 76.17% | 64,314,961 | 1,187.67% |

* *Covered payroll shown is the reported payroll on the actuarial valuation date (census date). Actual covered payroll paid during the year was unavailable. Covered payroll for this purpose excludes DROP member payroll.*

# Schedule of Contributions Multiyear

| FY Ending June 30, | Actuarially Determined Contribution# | Actual Contribution | Contribution Deficiency (Excess) | Covered Payroll | Actual Contribution as a % of Covered Payroll |
|---|---|---|---|---|---|
| 2014 | $ 62,954,305 | $ - | $ 62,954,305 | $ 186,694,166 * | 0.00% |
| 2015 | N/A | 114,300,000 | N/A | 132,566,687 | 86.22% |
| 2016 | N/A | 37,787,744 | N/A | 134,758,956 | 28.04% |
| 2017 | N/A | 18,300,000 | N/A | 126,865,176 | 14.42% |
| 2018 | N/A | 18,300,000 | N/A | 116,288,356 | 15.74% |
| 2019 | N/A | 18,300,000 | N/A | 111,407,220 | 16.43% |
| 2020 | N/A | 18,300,000 | N/A | 105,233,078 | 17.39% |
| 2021 | N/A | 18,300,000 | N/A | 71,842,120 | 25.47% |
| 2022 | N/A | 18,300,000 | N/A | 64,314,961 | 28.45% |

* *Includes DROP members, consistent with Plan Funding.*

\# *Beginning with FY 2015, employer contributions are set forth in the POA through 2023 and are not actuarially determined. Employer contributions will again be actuarially determined in FY 2024 and beyond.*

# Notes to Schedule of Contributions

**Contribution Requirement:** The expected contributions for fiscal year 2015 and beyond are provided in the POA. A contribution schedule showing future contribution requirements is below.

| Fiscal Year | Contribution (Millions) |
|---|---|
| 2023 | 18.3 |

Beginning with Fiscal Year 2024, employer contributions will be actuarially determined.

# Schedule of Investment Returns

This information should be provided by the Plan's investment consultant.

# SECTION D

## NOTES TO FINANCIAL STATEMENTS

# Notes to Financial Statements

## Single Discount Rate

A Single Discount Rate of 6.93% was used to measure the total pension liability as of June 30, 2022. This Single Discount Rate was based on the expected rate of return on pension plan investments of 6.93% as directed by the System and the System's Auditor. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions have ceased and that employer contributions will be made at rates equal to those set by the final Plan of Adjustment through June 30, 2023 and the System's funding policy thereafter. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 6.93%, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher.

# Sensitivity of Net Pension Liability to the Single Discount Rate Assumption[#]

| | 1% Decrease 5.93% | Current Single Discount Rate Assumption 6.93% | 1% Increase 7.93% |
|---|---|---|---|
| Total Pension Liability (TPL) | $3,504,739,137 | $3,205,964,135 | $2,951,482,792 |
| Net Position Restricted for Pensions | 2,442,114,254 | 2,442,114,254 | 2,442,114,254 |
| Net Pension Liability (NPL) | $1,062,624,883 | $ 763,849,881 | $ 509,368,538 |

[#] *The inclusion of discount rates shown on this required schedule does not imply the rate is reasonable (other than the current assumption).*

## Expected Real Returns by Asset Class

This information will be provided by the plan's investment consultant.

# Notes to Financial Statements

## Summary of Population Statistics

| | |
|---|---|
| Inactive Plan Members or Beneficiaries Currently Receiving Benefits | 7,823 |
| DROP Members | 728 |
| Post-2014 Pre-Conversion Duty Disability | 81 |
| Inactive Plan Members Entitled to But Not Yet Receiving Benefits | 385 |
| Active Plan Members | 1,234 |
| Total Plan Members | 10,251 |

Additional information regarding the plan population may be found in the June 30, 2021 actuarial valuation of the System.

## Additional Notes

As discussed in Section G-2(f) of the Combined PFRS Plan, interest on the Annuity Savings Fund (ASF) is capped. If the actual interest rate earned on the fund exceeds the cap, a portion of the excess (that would have been payable to the ASF if not for the cap) is transferred to Component I if needed to fund transition liabilities. We have assumed no future transfers of assets to Component I in this valuation. Future transfers to Component I will be recognized as they occur. If future transfers to Component I are triggered, Component II liabilities and assets will be reduced in equal amounts.

Liabilities and reported assets for Component I are not included in this report and will be detailed in a separate report.

# SECTION E

## SUMMARY OF BENEFITS

# Summary of Frozen Benefit Provisions

### *Component II Frozen Benefits*

*All Component II benefits are frozen as of June 30, 2014 based on service and average final compensation accrued as of that date and the provisions of the Detroit Police and Fire Retirement System as it existed on June 30, 2014 and all future cost-of-living adjustments ("COLA's") were reduced from 2.25% to 1.0125% per year. The benefits evaluated in this report are the frozen reduced benefits. Component II benefits are payable after separation from service, upon meeting the eligibility conditions of the plan as it existed on June 30, 2014, regardless of whether the individual is eligible to receive a Component I benefit at that time.*

*Our understanding of the June 30, 2014 plan provisions is provided below for completeness. The material below is a non-legal summary and is not intended to cover all potential situations that could occur. If there are discrepancies between the description below, and appropriate legal documents, the latter necessarily govern.*

### *Age and Service Retirement*

***Eligibility*** - 25 years of service regardless of age. 20 years of service regardless of age for eligible DPOA and DFFA members. DFFA members must retire by age 60.

***Annual Amount*** - An annuity equal to the actuarial equivalent of the member's accumulated contribution account plus a defined benefit, which, when added to the annuity will provide the following:

**Pre-1969 Members** - For all service earned up to April 5, 2011 for LSA and Fire equivalent members, and up to September 1, 2011 for DPOA and Fire equivalent members, 2.5% of AFC times the first 25 years of service, with a maximum allowance of 15/22 of a police officer's or firefighter's annual rate of compensation (actuarially reduced to reflect early payment).

For all service earned after April 5, 2011 for LSA and Fire equivalent members, and after September 1, 2011 for DPOA and Fire equivalent members, 2.1% of AFC times the first 25 years of service, with a maximum allowance of 15/22 of a police officer's or firefighter's annual rate of compensation.

**1969 Plan Members** - For all service earned up to April 5, 2011 for LSA and Fire equivalent members, and up to September 1, 2011 for DPOA and Fire equivalent members, 2.5% of AFC times the first 25 years of service plus 2.1% of AFC times each of the next 10 years of service.

For all service earned after April 5, 2011 for LSA and Fire equivalent members, and after September 1, 2011 for DPOA and Fire equivalent members, 2.1% of AFC times each year of service, up to 35 years of service.

Members may elect to receive their accumulated contribution account in a lump sum after 25 years of service (20 years of service for eligible DPOA and DFFA members). The defined benefit at retirement is then reduced by the actuarial equivalent of the amount of principal withdrawn. No reduction is made with regard to the interest portion of the withdrawal. Pre-1969 plan members may elect 1969 plan benefits at the time of retirement.

# Summary of Frozen Benefit Provisions

***Type of Average Final Compensation (AFC)*** - Average of the current compensation for the ranks held in each of last 5 years (last 3 years for DPCOA, Executive Members and their Fire equivalents). Pension benefits for non-union employees may not be diminished due to a reduction in compensation because of fiscal emergency. AFC includes prior longevity distributions during the averaging period in accordance with the following schedule: 1% of compensation after 5 years of service, 2% after 11 years, 3% after 16 years and 4% after 21 years. A member may elect that upon retirement or upon death before retirement either (i) a lump sum payment equal to 85% (100% for DPOA and DPCOA members) of the amount of his or her unused accumulated sick leave bank, or (ii) to have the 3-year average of 25% of the value of the accumulated unused sick leave bank added to his or her AFC. Any member electing the AFC adjustment option will also be paid a lump sum equal to the remaining value of the sick leave bank as provided in (i) above. Lump sum payments are not paid by the Retirement System.

### *Deferred Retirement (vested benefit)*

***Eligibility*** - 10 years of service for DPOA and Fire equivalents, age 40 with 8 years of service for all others.

***Annual Amount*** - Same as regular retirement but based on average final compensation and credited service at the time of termination.

***Benefit Commencement - DPOA and Fire equivalent members hired after 6/30/85***: Unreduced benefit begins at age 62. ***All other members***: Unreduced benefit begins at the age when the member would have first been eligible for regular retirement had the member continued in City service. **All** members may elect a reduced benefit payable immediately.

**Note, for valuation purposes, the frozen accrued benefit was valued in the event of a death or disability. The following death and disability provisions are provided for historical purposes only.**

### *Duty Disability Retirement*

***Eligibility*** - No age or service requirement.

***Annual Amount*** – A basic benefit of 50% of final compensation as of June 30, 2014 and a supplemental benefit of 16-2/3% of final compensation as of June 30, 2014 is payable for 24 months. After 24 months, members disabled from any occupation continue to receive both benefits; otherwise, only the 50% benefit is then payable. Upon attaining 25 years of service, the disability benefit is 50% of final compensation as of June 30, 2014. Members convert to regular retirement benefit at age 65. Worker's compensation payments are offset. Members who have already filed under the old duty disability plan will receive 66-2/3% of final compensation as of June 30, 2014 payable to eligibility date for regular retirement. Benefits prior to age 65 are assumed to be paid from Component I. Benefits after age 65 are assumed to be paid from Component II (this plan).

### *Non-Duty Disability Retirement*

***Eligibility*** - 5 years of service.

***Annual Amount*** - Computed as a regular retirement benefit, but based on average final compensation and credited service at the time of disability. Minimum benefit is 20% of average final compensation. Benefits are assumed to be paid from Component II (this plan).

### *Duty Death Before Retirement*

***Eligibility*** - No age or service requirement.

# Summary of Frozen Benefit Provisions

***Annual Amount*** - Surviving spouse receives 5/11 of police officer's or firefighter's compensation and each child under age 18 receives 1/10 of such compensation with a maximum total of 7/33 of such compensation. If there is no surviving spouse, each child receives 1/4 of such compensation with a maximum total of 1/2 of such compensation.  If there is no surviving spouse or children, each dependent parent receives 1/6 of such compensation.  Worker's compensation payments are offset. Benefits are assumed to be paid from Component I.

### *Non-Duty Death Before Retirement*

***Eligibility*** - No age or service requirement.

***Annual Amount*** - Same as a regular retirement benefit to a surviving spouse, but reduced in accordance with a 100% joint and survivor option election.  Minimum benefit is 20% of average final compensation. Each child under 18 receives 1/7 of police officer's or firefighter's compensation with a maximum total of 2/7 of such compensation.  If there is no spouse or children, each dependent parent receives 1/7 of such compensation. Benefits are assumed to be paid from Component II (this plan).

### *Post-Retirement Cost-of-Living Adjustments*

| | | |
|---|---|---|
| **Pre-1969 Members** | - | Allowances increase in proportion to active member compensation for the corresponding rank. These increases are not considered COLAs and are therefore not reduced under the POA. |
| **1969 Plan Members** | - | Police retired after July 1, 2001, certain Police classes retired after July 1, 1998 and all Fire members: For all service earned up to April 5, 2011 for LSA members (September 1, 2011 for DPOA members) pensions increase by 2.25% of the current pension amount each July 1. No cost-of-living adjustments for service earned after April 5, 2011 for LSA members (September 1, 2011 for DPOA members). COLA is reduced by 45% according to the POA. |

### *Member Contributions*

5% of covered compensation payable until first eligible for regular retirement. Interest on member contributions provides benefits in addition to the formula benefit.

### *DROP Plan*

Members with 25 years (20 years for DPOA members) of service may elect to participate in the DROP. When a DROP election is made, the member ceases to accrue any further age and service retirement benefits.  Seventy-five percent (75%) of the member's benefit (accrued to their DROP date) is contributed to a DROP account (a defined contribution account).  At retirement the member is entitled to the balance in the DROP account and a monthly benefit equal to 100% of their benefit accrued to their DROP date, increased by any post-retirement increases that the member would have received, had the member been retired. Fire members must retire from the DROP plan at age 60.  Participation in the DROP is limited to 10 years for DPLSA members electing to DROP after April 5, 2011 and prior to July 1, 2014. Members electing DROP after July 1, 2014 are limited to 5 years of DROP participation. Effective October 31, 2018, DPLSA and DPCOA members are limited to 10 years of DROP participation. Effective May 9, 2019, DPOA members are limited to 10 years of DROP participation. Effective September 21, 2021, DPLSA members are limited to 15 years of DROP participation.

# SECTION F

## ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

# Summary of Assumptions Used for PFRS Actuarial Valuation Assumptions Adopted by Board of Trustees After Consulting with Actuary

## ASSUMPTION REVIEW

**All assumptions are estimates of future experience except as noted. The rationale for the assumptions is based on experience studies unless noted otherwise.**

## ECONOMIC ASSUMPTIONS

***For the Determination of the June 30, 2022 TPL:***
***The investment return rate*** used in the valuation was 6.93% per year, compounded annually (net after investment expenses). This assumption was provided by the Retirement System.

***Price inflation*** is not directly used in the valuation. For purposes of assessing the reasonability of the investment return assumption, we assumed price inflation of 2.50% per year. A detailed rationale is included in the 2015-2020 Experience Study.

## NON-ECONOMIC ASSUMPTIONS

***The mortality table*** used to measure healthy retired life mortality is the PubS-2010 Public Safety Retiree table for males and females with male rates multiplied by 115% and female rates multiplied by 125%. The mortality table used to measure disabled retired life mortality is the PubS-2010 Public Safety Disabled Retiree table for males and females with male rates multiplied by 114%. The mortality table used to measure pre-retirement life mortality is the PubS-2010 Public Safety Employee table for males and females with 50% of deaths assumed to be duty related. The tables are projected to be fully generational, based on the two-dimensional, sex distinct mortality improvement scale MP-2021. This assumption was first used as of June 30, 2021 with the rationale based on the 2015-2020 Experience Study.

***The probabilities of age/service retirement*** for members eligible to retire are shown on the following pages. This assumption was first used as of June 30, 2021 with the rationale based on the 2015-2020 Experience Study.

***The probabilities of separation*** from service (including *death-in-service*) are shown for sample ages on the following pages. This assumption was first used as of June 30, 2021 with the rationale based on the 2015-2020 Experience Study.

***Data adjustments:*** See the June 30, 2021 actuarial valuation issued March 16, 2022.

# Single Life Retirement Values
# Based on PubS-2010
# for Males and Females

| Sample Attained Ages in 2021 | Future Life Expectancy (years) Men | Women |
|---|---|---|
| 45 | 39.27 | 40.61 |
| 50 | 34.16 | 35.42 |
| 55 | 29.13 | 30.35 |
| 60 | 24.30 | 25.53 |
| 65 | 19.79 | 21.01 |
| 70 | 15.63 | 16.77 |
| 75 | 11.84 | 12.86 |
| 80 | 8.55 | 9.46 |

# Probabilities of Service Retirement or Entering DROP

| | Percent of Eligible Active Members Retiring or Entering DROP Within Next Year | |
|---|---|---|
| **Age** | **Police** | **Fire** |
| 35 | 20% | |
| 36 | 20% | |
| 37 | 20% | |
| 38 | 20% | |
| 39 | 20% | |
| 40 | 20% | |
| 41 | 20% | |
| 42 | 20% | |
| 43 | 20% | |
| 44 | 20% | |
| 45 | 20% | |
| 46 | 20% | |
| 47 | 20% | |
| 48 | 20% | |
| 49 | 20% | |
| 50 | 30% | 20% |
| 51 | 30% | 20% |
| 52 | 30% | 20% |
| 53 | 30% | 20% |
| 54 | 30% | 20% |
| 55 | 30% | 20% |
| 56 | 30% | 20% |
| 57 | 30% | 20% |
| 58 | 30% | 20% |
| 59 | 30% | 20% |
| 60 | 30% | 100% |
| 61 | 30% | 100% |
| 62 | 30% | 100% |
| 63 | 30% | 100% |
| 64 | 30% | 100% |
| 65 | 100% | 100% |
| Ref | 3299 | 160 |
| | 35 | 50 |

Police members eligible for retirement under 20 & Out with at least 10 years of Component II (Legacy) benefit service are assumed to retire or enter the DROP while eligible for Component II (Legacy) normal retirement. These members are assumed to have 40% probability of retiring or entering the DROP during the first year of eligibility. All other members are assumed to retire or enter the DROP while eligible for Component I (Hybrid) normal retirement only. This assumption was first used as of June 30, 2021 with the rationale based on the 2015-2020 Experience Study.

# Probabilities of Separation

| Sample Ages | Years of Service | % of Active Members Withdrawing within Next Year | |
|---|---|---|---|
| | | Police | Fire |
| ALL | 0 | 11.00% | 5.00% |
| | 1 | 9.00% | 3.00% |
| | 2 | 7.50% | 3.00% |
| | 3 | 6.25% | 2.50% |
| | 4 | 5.50% | 2.50% |
| 25 | 5 & Over | 5.50% | 2.50% |
| 30 | | 4.95% | 2.50% |
| 35 | | 3.45% | 2.50% |
| 40 | | 2.55% | 2.50% |
| 45 | | 2.25% | 2.50% |
| 50 | | 1.65% | 2.50% |
| 55 | | 1.20% | 2.50% |
| 60 | | 1.20% | 2.50% |
| Ref | | 1400 | 1401 |
| | | 1605 | 1606 x 1 |

The withdrawal rates for members with less than 5 years of service are shown for completeness. Given the demographics of this closed group, there is likely no one being exposed to the rates. This assumption was first used as of June 30, 2021 with the rationale based on the 2015-2020 Experience Study.

| Sample Ages | % of Active Members Becoming Disabled within Next Year | |
|---|---|---|
| | Ordinary | Duty |
| 25 | 0.05% | 0.28% |
| 30 | 0.05% | 0.28% |
| 35 | 0.08% | 0.48% |
| 40 | 0.11% | 0.62% |
| 45 | 0.16% | 0.89% |
| 50 | 0.21% | 1.17% |
| 55 | 0.21% | 1.17% |
| 60 | 0.21% | 1.17% |
| Ref | 1237 x 0.15 | 1237 x 0.85 |

This assumption was first used as of June 30, 2021 with the rationale based on the 2015-2020 Experience Study.

# Miscellaneous and Technical Assumptions

**Administrative Expenses:** Estimated administrative expenses of 0.81% of expected benefit payments are included in the determination of employer contributions.

**Annuity Savings Fund (ASF) Interest Credits:** For purposes of calculating future refunds of member contributions, the ASF is assumed to earn 5.25% interest in all future years.

**Annuity Savings Fund Excess Interest:** The Component I (Hybrid) Transition Cost is funded by Component II (Legacy) ASF returns in excess of 5.25%. ASF return excess ceases in 2023 and the POA mandates the use of a 6.75% return assumption until 2023. The current assumption is:

- For purposes of determining valuation assets and liabilities, only considering transfers related to prior investment experience.
- For purposes of determining the Section 9.5 funded status, projecting the amount of future transfers.

**Average Final Compensation (AFC):** Frozen AFC is reported in the data provided for the annual valuation. Longevity payments are included directly in the reported frozen AFC but Sick Leave is not. We take the AFC provided to us, use the 75% of 2014 AFC check, and then add on an estimate for sick leave. The sick leave is estimated with the following formula:

[Annual pay reported in 2014 valuation] X [Capped Sick Leave Bank hours reported in 2014 valuation] / [8 hours/work day] / [260 work days/year] / [3-years in average period] X [25% added to AFC]

Where [Capped Sick Leave Bank hours reported in 2014 valuation] is the smaller of:
[Sick Leave Bank hours reported in 2014 valuation] OR
[Frozen Service] X [ 8 hours/work day] X [25 days/year of service]

We annually test the reported AFC against a sample set of retirees to determine if any additional adjustments should be made to the liability. No additional adjustment was made for this report.

**Class Codes / Bargaining Unit:** For valuation purposes, members are categorized as DPOA, DFFA or LSA based on class codes and bargaining units provided by the Retirement System and are primarily used in the valuation to determine normal retirement eligibility (20 & Out versus 25 & Out) and allowable time in the DROP. For determining retirement eligibility, the class codes used for this valuation were taken from the 2014 data file. For determining allowable time in the DROP, information as of the valuation date was used. Therefore, counts in the valuation may not represent actual membership in the respective associations.

**Data Adjustments:** Assumptions regarding incomplete or missing data are reviewed annually with the System and adjusted as directed by the System.

# Miscellaneous and Technical Assumptions (Continued)

| | |
|---|---|
| **Decrement Operation:** | Ordinary disability and mortality decrements do not operate during the first five years of service. Disability and withdrawal do not operate during retirement eligibility. |
| **Decrement Timing:** | Decrements are assumed to occur mid-year. |
| **Decrement Relativity:** | Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects. |
| **Deferred Vested Benefit Commencement Age:** | Members are assumed to commence benefits at the age in which they are first eligible for unreduced benefits. |
| **Disability Change Age:** | For active members that become duty disabled, the Component II (Legacy) plan is assumed to only be responsible for the frozen benefit which becomes payable starting at age 65. |
| **DROP Assumption:** | Members are assumed to retire or DROP based on assumed rates.<br>For Police members eligible for a maximum DROP period of 10 years, 75% of eligible members are assumed to enter the DROP and remain in the DROP for seven years.<br><br>For Police members eligible for a maximum DROP period of 15 years, 75% of eligible members are assumed to enter the DROP and remain in the DROP for nine years.<br><br>For Fire members, 60% of eligible members are assumed to enter the DROP and remain in the DROP for five years.<br><br>Expected benefits paid into DROP contributions are discounted at the assumed rate of return for valuation purposes. Balances for current DROP participants are held outside of system assets and are excluded from the valuation. |
| **DROP Cost Neutrality:** | An assessment of the cost neutrality of the DROP was outside the scope of this valuation. |
| **Duty Death Benefit:** | For current active members, the duty death pension benefit is assumed to be payable entirely by the Component I (Hybrid) plan. It was assumed that the Component II (Legacy) plan would only be responsible for the refund of member contributions. |

# Miscellaneous and Technical Assumptions (Continued)

**Duty Disability Benefits:** The Police and Fire Retirement System Combined Plan provides disability benefits for both Component I (Hybrid) and Component II (Legacy) members. Our understanding of the Component II (Legacy) freeze as it relates to duty disability benefits was that the only benefit payable from Component II (Legacy) would be the frozen accrued benefit, payable at the time of conversion to normal retirement (for members becoming disabled after 6/30/2014) and that any benefits payable during the period of disability would be paid from Component I (Hybrid).

We have valued the pre-conversion duty disability benefit in a manner consistent with the plan provision (paid out of Component I (Hybrid)). We understand that the System is in the process of moving to a new data system and expect this issue to be corrected once the new data system is in place.

For current duty disability retirees that became disabled after June 30, 2014, we have estimated the amount that will be paid by Component I (Hybrid) and Component II (Legacy) upon conversion.

For future retirees, duty disability retirement benefits prior to age 65 are assumed to be paid from Component I (Hybrid).

**Eligibility Testing:** Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date of decrement.

**Forfeiture Assumption:** It is assumed that 0% of members will elect to forfeit their benefit.

**Form of Payment:** The actuarial equivalent basis for optional forms of payment and early retirement are based on the RP-2014 Mortality Table with Blue Collar adjustments projected 11 years, a 6.75% interest rate, 90%/10% unisex mix and a 1.0125% COLA assumption per System Policy. Annuity withdrawal factors use the same mortality and interest rate assumptions with a 0% COLA assumption. No adjustment has been made for alternate forms of payment elections. Principal balances of accumulated member contributions were converted to life annuity offsets based on plan factors for the valuation.

**Incidence of Contributions:** Employer contributions are assumed to be received on the last day of the fiscal year.

**IRC Section 401(h) Limit:** We did not test for the 401(h) limit on employer contributions for medical benefits. No employer contributions are anticipated in this valuation.

**IRC Section 415 Limit:** We assumed that no benefits will be limited by IRC Section 415. The limit is assumed to grow with wage inflation.

# Miscellaneous and Technical Assumptions (Concluded)

| | |
|---|---|
| **Mandatory Retirement Age:** | Currently most members of the DPFRS are subject to a mandatory retirement age of 60. We have assumed employment would end at age 60 for Fire members regardless of the length of their DROP participation at that age. We understand that the mandatory retirement age is currently not enforced for Police members and have assumed the mandatory retirement age is not in effect for Police members. |
| **Marriage Assumption:** | 100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. This assumption accounts for potential dependent children/dependent parent death benefits. No other assumption is made for surviving children/dependent parents. Male spouses are assumed to be three years older than female spouses. |
| **New Entrant Assumption:** | No assumption is made for experience related to members rehiring/reentering active service. |
| **Pay Increase Timing:** | N/A for Component II (Legacy). |
| **Pop-Up Benefits:** | For current retirees with a pop-up benefit, the value of the pop-up was estimated by valuing a non-pop-up option and increasing the associated liabilities by 1%. |
| **Post-Retirement COLA / Variable Pension Improvement Factor (VPIF):** | Active members are assumed to receive a 0.9% COLA rather than 1.0125% because the annuity portion is not subject to the COLA. Post-retirement increases for retired members were based on the plan in effect at retirement. For the pre-69 plan members, future COLA's are assumed to be the same as wage inflation for active members (not reduced in POA). For other members retiring before 2014, the COLA rate is prorated by the ratio of COLA eligible service to total service at retirement before applying the POA mandated reduction to 1.0125%. The service ratio is provided on the data file. |
| **Service Credit Accruals:** | Service accruals for calculating benefits end as of June 30, 2014 for Component II (Legacy) and begin as of June 30, 2014 for Component I (Hybrid). However, service in Component I (Hybrid) and Component II (Legacy) may be used to satisfy benefit eligibility requirements in both plans. |
| **Workers Compensation Offset:** | No Workers Compensation offsets are assumed for duty disability benefits. |

The rationale for the miscellaneous and technical assumptions is the 2015-2020 Experience Study, modified as necessary for changes in data or administration.

# SECTION G

## CALCULATION OF THE SINGLE DISCOUNT RATE

# Calculation of the Single Discount Rate at End of Year

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension 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 pension 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 pension plan investments is 6.93%; the municipal bond rate is 3.69%; and the resulting SDR is 6.93% as of June 30, 2022.

The tables in this section provide background for the development of the SDR.

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). For purposes of determining the discount rate as of June 30, 2022, the employer contributions for the 10-year period ending June 30, 2023 were set by the 8$^{th}$ Amended Plan of Adjustment (POA). Subsequent employer contributions were determined by using the Board-adopted Funding Policy using 6.93% interest, net of investment expenses.

Note that these projections are specifically used to determine the GASB discount rate and should not be interpreted as a funding projection or recommendation.

**Rates of Return:** The 6.93% rate of return was before administrative expenses. Therefore, the projections assumed that any administrative expenses incurred by the plan will directly increase employer contributions beginning with FY 2024.

**Contingency Reserve:** The System maintains a contingency reserve equal to the excess (if any) of the Annuity Reserve Fund over the annuity liabilities. We believe GASB Statement No. 67 and No. 68 requires this reserve to be removed from the NPL. Since there are no benefits in the projection directly related to the reserve, the result is that the reserve will continue to grow with interest, if experience is exactly as assumed. Please see comments on page 7 for additional details.

# Calculation of the Single Discount Rate at End of Year

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 SDR. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR. For purposes of determining the discount rate as of June 30, 2022, the benefit payments reflect the plan provisions in force as of June 30, 2022.

**Unfunded Actuarial Accrued Liabilities:** Actual employer contributions through June 30, 2023 are set by the POA.

# Single Discount Rate Development
# Projection of Contributions
# End of Year

| Fiscal Year Ending June 30, | Projected Contributions from Current Employees | Projected Service Cost | Administrative Expense Contributions (EOY) | Projected UAL Contributions (EOY) | Projected Total Contributions |
|---|---|---|---|---|---|
| 2023 | $ - | $ - | $ 2,460,485 | $ 15,839,515 | $ 18,300,000 |
| 2024 | - | - | 2,443,169 | 77,909,194 | 80,352,364 |
| 2025 | - | - | 2,425,202 | 77,909,194 | 80,334,397 |
| 2026 | - | - | 2,405,929 | 77,909,194 | 80,315,124 |
| 2027 | - | - | 2,376,323 | 77,909,194 | 80,285,517 |
| 2028 | - | - | 2,343,199 | 77,909,194 | 80,252,393 |
| 2029 | - | - | 2,304,471 | 77,909,194 | 80,213,665 |
| 2030 | - | - | 2,262,816 | 77,909,194 | 80,172,011 |
| 2031 | - | - | 2,218,105 | 77,909,194 | 80,127,300 |
| 2032 | - | - | 2,166,528 | 77,909,194 | 80,075,722 |
| 2033 | - | - | 2,110,938 | 77,909,194 | 80,020,133 |
| 2034 | - | - | 2,053,491 | 77,909,194 | 79,962,685 |
| 2035 | - | - | 1,991,486 | 77,909,194 | 79,900,680 |
| 2036 | - | - | 1,923,581 | 77,909,194 | 79,832,776 |
| 2037 | - | - | 1,854,649 | 77,909,194 | 79,763,844 |
| 2038 | - | - | 1,780,588 | 77,909,194 | 79,689,783 |
| 2039 | - | - | 1,706,497 | 77,909,194 | 79,615,692 |
| 2040 | - | - | 1,631,017 | 77,909,194 | 79,540,212 |
| 2041 | - | - | 1,553,691 | 77,909,194 | 79,462,885 |
| 2042 | - | - | 1,477,021 | 77,909,194 | 79,386,215 |
| 2043 | - | - | 1,399,939 | 77,909,194 | 79,309,133 |
| 2044 | - | - | 1,323,945 | - | 1,323,945 |
| 2045 | - | - | 1,249,153 | - | 1,249,153 |
| 2046 | - | - | 1,176,598 | - | 1,176,598 |
| 2047 | - | - | 1,106,280 | - | 1,106,280 |
| 2048 | - | - | 1,038,242 | - | 1,038,242 |
| 2049 | - | - | 972,736 | - | 972,736 |
| 2050 | - | - | 910,051 | - | 910,051 |
| 2051 | - | - | 850,213 | - | 850,213 |
| 2052 | - | - | 792,935 | - | 792,935 |
| 2053 | - | - | 738,081 | - | 738,081 |
| 2054 | - | - | 685,486 | - | 685,486 |
| 2055 | - | - | 635,057 | - | 635,057 |
| 2056 | - | - | 586,711 | - | 586,711 |
| 2057 | - | - | 540,314 | - | 540,314 |
| 2058 | - | - | 495,838 | - | 495,838 |
| 2059 | - | - | 453,271 | - | 453,271 |
| 2060 | - | - | 412,623 | - | 412,623 |
| 2061 | - | - | 373,928 | - | 373,928 |
| 2062 | - | - | 337,234 | - | 337,234 |
| 2063 | - | - | 302,603 | - | 302,603 |
| 2064 | - | - | 270,098 | - | 270,098 |
| 2065 | - | - | 239,777 | - | 239,777 |
| 2066 | - | - | 211,742 | - | 211,742 |
| 2067 | - | - | 185,967 | - | 185,967 |
| 2068 | - | - | 162,368 | - | 162,368 |
| 2069 | - | - | 140,986 | - | 140,986 |
| 2070 | - | - | 121,769 | - | 121,769 |
| 2071 | - | - | 104,641 | - | 104,641 |
| 2072 | - | - | 89,508 | - | 89,508 |

Employer contributions as shown may differ substantially from those determined by a funding valuation.

# Single Discount Rate Development
# Projection of Contributions
# End of Year (Concluded)

| Fiscal Year Ending June 30, | Projected Contributions from Current Employees | Projected Service Cost | Administrative Expense Contributions (EOY) | Projected UAL Contributions (EOY) | Projected Total Contributions |
|---|---|---|---|---|---|
| 2073 | $ - | $ - | $ 76,261 | $ - | $ 76,261 |
| 2074 | - | - | 64,769 | - | 64,769 |
| 2075 | - | - | 54,893 | - | 54,893 |
| 2076 | - | - | 46,477 | - | 46,477 |
| 2077 | - | - | 39,366 | - | 39,366 |
| 2078 | - | - | 33,397 | - | 33,397 |
| 2079 | - | - | 28,415 | - | 28,415 |
| 2080 | - | - | 24,272 | - | 24,272 |
| 2081 | - | - | 20,830 | - | 20,830 |
| 2082 | - | - | 17,967 | - | 17,967 |
| 2083 | - | - | 15,576 | - | 15,576 |
| 2084 | - | - | 13,565 | - | 13,565 |
| 2085 | - | - | 11,858 | - | 11,858 |
| 2086 | - | - | 10,392 | - | 10,392 |
| 2087 | - | - | 9,120 | - | 9,120 |
| 2088 | - | - | 8,006 | - | 8,006 |
| 2089 | - | - | 7,019 | - | 7,019 |
| 2090 | - | - | 6,141 | - | 6,141 |
| 2091 | - | - | 5,356 | - | 5,356 |
| 2092 | - | - | 4,653 | - | 4,653 |
| 2093 | - | - | 4,024 | - | 4,024 |
| 2094 | - | - | 3,461 | - | 3,461 |
| 2095 | - | - | 2,961 | - | 2,961 |
| 2096 | - | - | 2,516 | - | 2,516 |
| 2097 | - | - | 2,124 | - | 2,124 |
| 2098 | - | - | 1,781 | - | 1,781 |
| 2099 | - | - | 1,482 | - | 1,482 |
| 2100 | - | - | 1,223 | - | 1,223 |
| 2101 | - | - | 1,002 | - | 1,002 |
| 2102 | - | - | 813 | - | 813 |
| 2103 | - | - | 654 | - | 654 |
| 2104 | - | - | 519 | - | 519 |
| 2105 | - | - | 408 | - | 408 |
| 2106 | - | - | 317 | - | 317 |
| 2107 | - | - | 244 | - | 244 |
| 2108 | - | - | 185 | - | 185 |
| 2109 | - | - | 139 | - | 139 |
| 2110 | - | - | 102 | - | 102 |
| 2111 | - | - | 74 | - | 74 |
| 2112 | - | - | 54 | - | 54 |
| 2113 | - | - | 38 | - | 38 |
| 2114 | - | - | 27 | - | 27 |
| 2115 | - | - | 19 | - | 19 |
| 2116 | - | - | 12 | - | 12 |
| 2117 | - | - | 8 | - | 8 |
| 2118 | - | - | 5 | - | 5 |
| 2119 | - | - | 3 | - | 3 |
| 2120 | - | - | 2 | - | 2 |
| 2121 | - | - | 1 | - | 1 |
| 2122 | - | - | - | - | - |

Employer contributions as shown may differ substantially from those determined by a funding valuation.

# Single Discount Rate Development
# Projection of Plan Fiduciary Net Position
# End of Year

| Fiscal Year Ending June 30, | Projected Beginning Plan Net Position Without Annuity Reserve | Projected Total Contributions (EOY) | Projected Benefit Payments | Annuity Reserve Refund | Projected Administrative Expenses | Projected Investment Earnings at 6.93% | Projected Ending Plan Net Position Without Annuity Reserve | Projected Ending Plan Net Position With Annuity Reserve |
|---|---|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) | (g)=(a)+(b)-(c)-(d)-(e)+(f) | (h) |
| 2023 | $ 2,442,114,254 | $ 18,300,000 | $ 293,755,375 | $ 27,060,289 | $ 2,379,419 | $ 157,274,037 | $ 2,294,493,209 | $ 2,323,428,775 |
| 2024 | 2,294,493,209 | 80,352,364 | 291,688,177 | - | 2,362,674 | 148,990,176 | 2,229,784,897 | 2,260,725,699 |
| 2025 | 2,229,784,897 | 80,334,397 | 289,543,042 | - | 2,345,299 | 144,579,566 | 2,162,810,518 | 2,195,895,517 |
| 2026 | 2,162,810,518 | 80,315,124 | 287,242,125 | - | 2,326,661 | 140,017,267 | 2,093,574,124 | 2,128,951,913 |
| 2027 | 2,093,574,124 | 80,285,517 | 283,707,379 | - | 2,298,030 | 135,340,588 | 2,023,194,820 | 2,061,024,290 |
| 2028 | 2,023,194,820 | 80,252,393 | 279,752,661 | - | 2,265,997 | 130,599,130 | 1,952,027,685 | 1,992,478,737 |
| 2029 | 1,952,027,685 | 80,213,665 | 275,128,971 | - | 2,228,545 | 125,826,051 | 1,880,709,884 | 1,923,964,195 |
| 2030 | 1,880,709,884 | 80,172,011 | 270,155,917 | - | 2,188,263 | 121,054,530 | 1,809,592,245 | 1,855,844,079 |
| 2031 | 1,809,592,245 | 80,127,300 | 264,817,932 | - | 2,145,025 | 116,309,413 | 1,739,066,000 | 1,788,523,087 |
| 2032 | 1,739,066,000 | 80,075,722 | 258,660,180 | - | 2,095,147 | 111,633,436 | 1,670,019,831 | 1,722,904,294 |
| 2033 | 1,670,019,831 | 80,020,133 | 252,023,335 | - | 2,041,389 | 107,076,483 | 1,603,051,723 | 1,659,601,079 |
| 2034 | 1,603,051,723 | 79,962,685 | 245,164,656 | - | 1,985,834 | 102,671,159 | 1,538,535,077 | 1,599,003,303 |
| 2035 | 1,538,535,077 | 79,900,680 | 237,761,917 | - | 1,925,872 | 98,454,407 | 1,477,202,375 | 1,541,861,049 |
| 2036 | 1,477,202,375 | 79,832,776 | 229,654,981 | - | 1,860,205 | 94,482,488 | 1,420,002,453 | 1,489,141,973 |
| 2037 | 1,420,002,453 | 79,763,844 | 221,425,188 | - | 1,793,544 | 90,801,190 | 1,367,348,755 | 1,441,279,644 |
| 2038 | 1,367,348,755 | 79,689,783 | 212,583,118 | - | 1,721,923 | 87,455,975 | 1,320,189,471 | 1,399,243,771 |
| 2039 | 1,320,189,471 | 79,615,692 | 203,737,352 | - | 1,650,273 | 84,491,650 | 1,278,909,187 | 1,363,441,950 |
| 2040 | 1,278,909,187 | 79,540,212 | 194,725,937 | - | 1,577,280 | 81,940,429 | 1,244,086,611 | 1,334,477,494 |
| 2041 | 1,244,086,611 | 79,462,885 | 185,493,912 | - | 1,502,501 | 79,844,303 | 1,216,397,386 | 1,313,052,357 |
| 2042 | 1,216,397,386 | 79,386,215 | 176,340,406 | - | 1,428,357 | 78,239,823 | 1,196,254,661 | 1,299,607,821 |
| 2043 | 1,196,254,661 | 79,309,133 | 167,137,665 | - | 1,353,815 | 77,160,006 | 1,184,232,320 | 1,294,747,854 |
| 2044 | 1,184,232,320 | 1,323,945 | 158,064,871 | - | 1,280,325 | 76,638,468 | 1,102,849,537 | 1,221,023,798 |
| 2045 | 1,102,849,537 | 1,249,153 | 149,135,475 | - | 1,207,997 | 71,305,326 | 1,025,060,544 | 1,151,424,282 |
| 2046 | 1,025,060,544 | 1,176,598 | 140,473,147 | - | 1,137,832 | 66,212,062 | 950,838,225 | 1,085,958,969 |
| 2047 | 950,838,225 | 1,106,280 | 132,077,948 | - | 1,069,831 | 61,356,793 | 880,153,519 | 1,024,638,131 |
| 2048 | 880,153,519 | 1,038,242 | 123,954,905 | - | 1,004,035 | 56,737,334 | 812,970,155 | 967,467,551 |
| 2049 | 812,970,155 | 972,736 | 116,134,238 | - | 940,687 | 52,350,132 | 749,218,098 | 914,422,163 |
| 2050 | 749,218,098 | 910,051 | 108,650,276 | - | 880,067 | 48,189,156 | 688,786,961 | 865,439,668 |
| 2051 | 688,786,961 | 850,213 | 101,506,284 | - | 822,201 | 44,246,643 | 631,555,332 | 820,450,071 |
| 2052 | 631,555,332 | 792,935 | 94,667,890 | - | 766,810 | 40,515,360 | 577,428,926 | 779,414,071 |
| 2053 | 577,428,926 | 738,081 | 88,118,923 | - | 713,763 | 36,989,328 | 526,323,649 | 742,306,365 |
| 2054 | 526,323,649 | 685,486 | 81,839,576 | - | 662,901 | 33,663,400 | 478,170,058 | 709,120,375 |
| 2055 | 478,170,058 | 635,057 | 75,819,000 | - | 614,134 | 30,533,136 | 432,905,118 | 679,860,292 |
| 2056 | 432,905,118 | 586,711 | 70,047,014 | - | 567,381 | 27,594,518 | 390,471,953 | 654,541,121 |
| 2057 | 390,471,953 | 540,314 | 64,507,647 | - | 522,512 | 24,844,153 | 350,826,261 | 633,195,423 |
| 2058 | 350,826,261 | 495,838 | 59,197,774 | - | 479,502 | 22,279,077 | 313,923,901 | 615,861,245 |
| 2059 | 313,923,901 | 453,271 | 54,115,653 | - | 438,337 | 19,896,292 | 279,719,474 | 602,581,076 |
| 2060 | 279,719,474 | 412,623 | 49,262,734 | - | 399,028 | 17,692,602 | 248,162,936 | 593,398,848 |
| 2061 | 248,162,936 | 373,928 | 44,642,930 | - | 361,608 | 15,664,404 | 219,196,729 | 588,357,490 |
| 2062 | 219,196,729 | 337,234 | 40,262,097 | - | 326,123 | 13,807,508 | 192,753,251 | 587,496,852 |
| 2063 | 192,753,251 | 302,603 | 36,127,508 | - | 292,633 | 12,116,980 | 168,752,693 | 590,852,025 |
| 2064 | 168,752,693 | 270,098 | 32,246,791 | - | 261,199 | 10,587,026 | 147,101,827 | 598,452,643 |
| 2065 | 147,101,827 | 239,777 | 28,626,823 | - | 231,877 | 9,210,951 | 127,693,856 | 610,323,283 |
| 2066 | 127,693,856 | 211,742 | 25,279,804 | - | 204,766 | 7,980,934 | 110,401,962 | 626,477,609 |
| 2067 | 110,401,962 | 185,967 | 22,202,492 | - | 179,840 | 6,888,298 | 95,093,896 | 646,933,586 |
| 2068 | 95,093,896 | 162,368 | 19,384,970 | - | 157,018 | 5,924,219 | 81,638,494 | 671,720,674 |
| 2069 | 81,638,494 | 140,986 | 16,832,245 | - | 136,341 | 5,079,434 | 69,890,328 | 700,865,203 |
| 2070 | 69,890,328 | 121,769 | 14,537,921 | - | 117,757 | 4,344,086 | 59,700,505 | 734,401,939 |
| 2071 | 59,700,505 | 104,641 | 12,493,020 | - | 101,193 | 3,708,165 | 50,919,098 | 772,377,341 |
| 2072 | 50,919,098 | 89,508 | 10,686,343 | - | 86,559 | 3,161,665 | 43,397,369 | 814,852,668 |

Employer contributions as shown may differ substantially from those determined by a funding valuation.

# Single Discount Rate Development
# Projection of Plan Fiduciary Net Position
# End of Year (Concluded)

| Fiscal Year Ending June 30, | Projected Beginning Plan Net Position Without Annuity Reserve | Projected Total Contributions (EOY) | Projected Benefit Payments | Annuity Reserve Refund | Projected Administrative Expenses | Projected Investment Earnings at 6.93% | Projected Ending Plan Net Position Without Annuity Reserve | Projected Ending Plan Net Position With Annuity Reserve |
|---|---|---|---|---|---|---|---|---|
| | (a) | (b) | (c) | (d) | (e) | (f) | (g)=(a)+(b)-(c)-(d)-(e)+(f) | (h) |
| 2073 | $ 43,397,369 | $ 76,261 | $ 9,104,637 | $ - | $ 73,748 | $ 2,694,733 | $ 36,989,978 | $ 861,907,130 |
| 2074 | 36,989,978 | 64,769 | 7,732,684 | - | 62,635 | 2,297,822 | 31,557,249 | 913,641,159 |
| 2075 | 31,557,249 | 54,893 | 6,553,528 | - | 53,084 | 1,961,833 | 26,967,362 | 970,179,687 |
| 2076 | 26,967,362 | 46,477 | 5,548,907 | - | 44,946 | 1,678,258 | 23,098,244 | 1,031,675,183 |
| 2077 | 23,098,244 | 39,366 | 4,699,861 | - | 38,069 | 1,439,289 | 19,838,969 | 1,098,310,290 |
| 2078 | 19,838,969 | 33,397 | 3,987,300 | - | 32,297 | 1,237,894 | 17,090,664 | 1,170,300,048 |
| 2079 | 17,090,664 | 28,415 | 3,392,515 | - | 27,479 | 1,067,865 | 14,766,950 | 1,247,893,744 |
| 2080 | 14,766,950 | 24,272 | 2,897,804 | - | 23,472 | 923,823 | 12,793,769 | 1,331,376,250 |
| 2081 | 12,793,769 | 20,830 | 2,486,873 | - | 20,144 | 801,195 | 11,108,778 | 1,421,069,024 |
| 2082 | 11,108,778 | 17,967 | 2,145,085 | - | 17,375 | 696,164 | 9,660,449 | 1,517,330,940 |
| 2083 | 9,660,449 | 15,576 | 1,859,606 | - | 15,063 | 605,600 | 8,406,956 | 1,620,559,013 |
| 2084 | 8,406,956 | 13,565 | 1,619,506 | - | 13,118 | 526,979 | 7,314,876 | 1,731,189,071 |
| 2085 | 7,314,876 | 11,858 | 1,415,680 | - | 11,467 | 458,299 | 6,357,885 | 1,849,696,561 |
| 2086 | 6,357,885 | 10,392 | 1,240,746 | - | 10,050 | 397,987 | 5,515,468 | 1,976,597,515 |
| 2087 | 5,515,468 | 9,120 | 1,088,936 | - | 8,820 | 344,822 | 4,771,655 | 2,112,449,687 |
| 2088 | 4,771,655 | 8,006 | 955,809 | - | 7,742 | 297,848 | 4,113,957 | 2,257,854,077 |
| 2089 | 4,113,957 | 7,019 | 838,039 | - | 6,788 | 256,314 | 3,532,464 | 2,413,456,774 |
| 2090 | 3,532,464 | 6,141 | 733,192 | - | 5,939 | 219,618 | 3,019,092 | 2,579,951,156 |
| 2091 | 3,019,092 | 5,356 | 639,468 | - | 5,180 | 187,260 | 2,567,061 | 2,758,080,518 |
| 2092 | 2,567,061 | 4,653 | 555,527 | - | 4,500 | 158,817 | 2,170,504 | 2,948,641,044 |
| 2093 | 2,170,504 | 4,024 | 480,383 | - | 3,891 | 133,917 | 1,824,171 | 3,152,485,119 |
| 2094 | 1,824,171 | 3,461 | 413,237 | - | 3,347 | 112,222 | 1,523,270 | 3,370,525,022 |
| 2095 | 1,523,270 | 2,961 | 353,409 | - | 2,863 | 93,425 | 1,263,382 | 3,603,736,956 |
| 2096 | 1,263,382 | 2,516 | 300,360 | - | 2,433 | 77,236 | 1,040,342 | 3,853,165,334 |
| 2097 | 1,040,342 | 2,124 | 253,583 | - | 2,054 | 63,386 | 850,215 | 4,119,927,469 |
| 2098 | 850,215 | 1,781 | 212,597 | - | 1,722 | 51,618 | 689,295 | 4,405,218,602 |
| 2099 | 689,295 | 1,482 | 176,932 | - | 1,433 | 41,691 | 554,103 | 4,710,317,292 |
| 2100 | 554,103 | 1,223 | 146,091 | - | 1,183 | 33,382 | 441,434 | 5,036,591,211 |
| 2101 | 441,434 | 1,002 | 119,607 | - | 969 | 26,483 | 348,343 | 5,385,503,300 |
| 2102 | 348,343 | 813 | 97,040 | - | 786 | 20,807 | 272,137 | 5,758,618,333 |
| 2103 | 272,137 | 654 | 77,973 | - | 632 | 16,181 | 210,367 | 6,157,609,954 |
| 2104 | 210,367 | 519 | 62,003 | - | 502 | 12,449 | 160,830 | 6,584,268,208 |
| 2105 | 160,830 | 408 | 48,759 | - | 395 | 9,471 | 121,555 | 7,040,507,574 |
| 2106 | 121,555 | 317 | 37,900 | - | 307 | 7,122 | 90,788 | 7,528,375,559 |
| 2107 | 90,788 | 244 | 29,100 | - | 236 | 5,292 | 66,988 | 8,050,061,893 |
| 2108 | 66,988 | 185 | 22,070 | - | 179 | 3,884 | 48,809 | 8,607,908,361 |
| 2109 | 48,809 | 139 | 16,535 | - | 134 | 2,815 | 35,093 | 9,204,419,312 |
| 2110 | 35,093 | 102 | 12,237 | - | 99 | 2,012 | 24,871 | 9,842,272,916 |
| 2111 | 24,871 | 74 | 8,946 | - | 72 | 1,416 | 17,343 | 10,524,333,178 |
| 2112 | 17,343 | 54 | 6,453 | - | 52 | 980 | 11,871 | 11,253,662,794 |
| 2113 | 11,871 | 38 | 4,584 | - | 37 | 665 | 7,954 | 12,033,536,885 |
| 2114 | 7,954 | 27 | 3,198 | - | 26 | 441 | 5,198 | 12,867,457,684 |
| 2115 | 5,198 | 19 | 2,185 | - | 18 | 285 | 3,299 | 13,759,170,242 |
| 2116 | 3,299 | 12 | 1,457 | - | 12 | 179 | 2,021 | 14,712,679,233 |
| 2117 | 2,021 | 8 | 946 | - | 8 | 108 | 1,183 | 15,732,266,926 |
| 2118 | 1,183 | 5 | 596 | - | 5 | 61 | 648 | 16,822,512,407 |
| 2119 | 648 | 3 | 364 | - | 3 | 32 | 317 | 17,988,312,141 |
| 2120 | 317 | 2 | 214 | - | 2 | 15 | 117 | 19,234,901,951 |
| 2121 | 117 | 1 | 121 | - | 1 | 4 | 0 | 20,567,880,531 |
| 2122 | 0 | - | - | - | - | 0 | 0 | 21,993,234,651 |

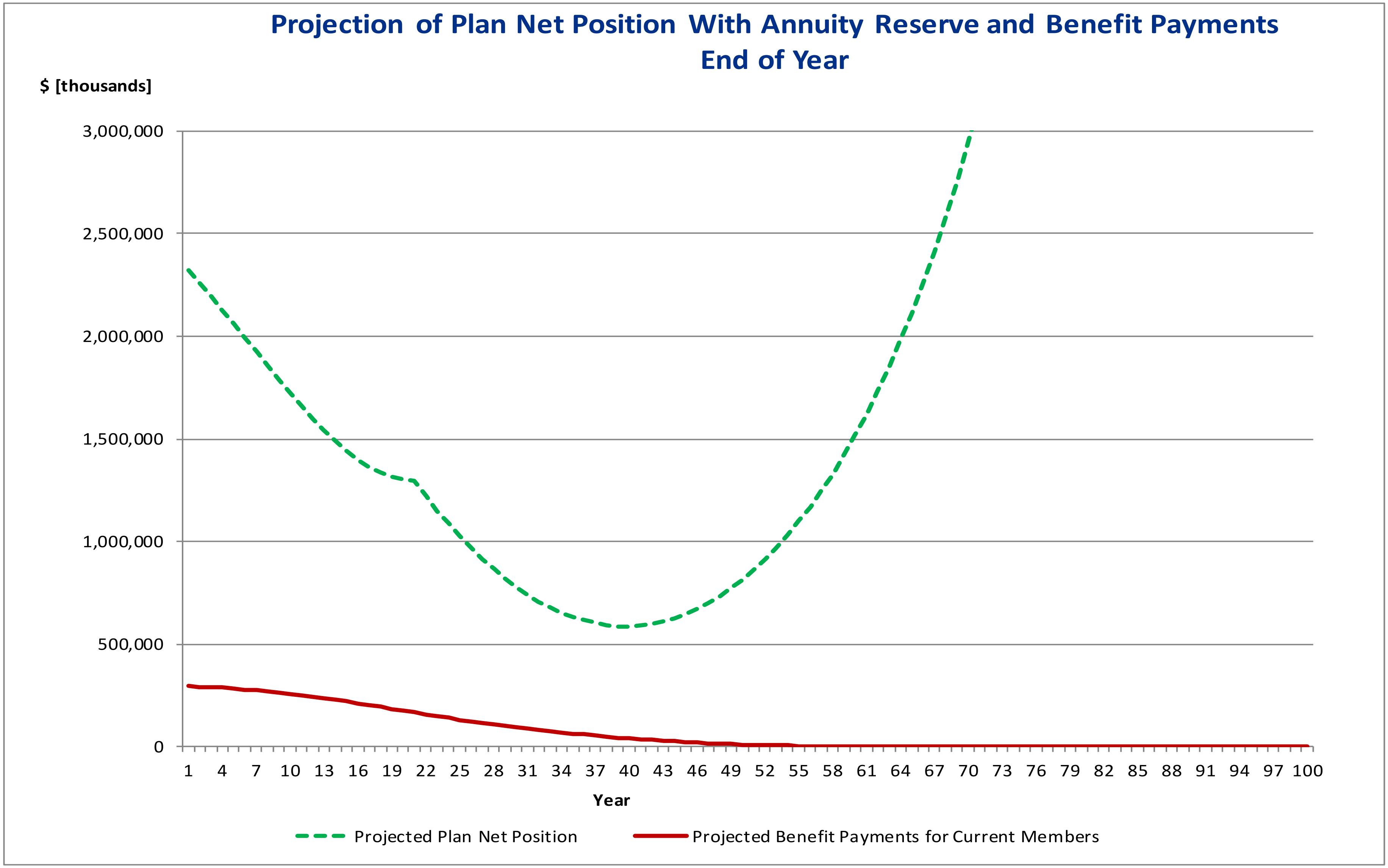
Employer contributions as shown may differ substantially from those determined by a funding valuation.

# Single Discount Rate Development
# Present Values of Projected Benefits
# End of Year

| Fiscal Year Ending June 30, | Projected Beginning Plan Net Position With Annuity Reserve | Projected Benefit Payments | Funded Portion of Benefit Payments | Unfunded Portion of Benefit Payments | Present Value of Funded Benefit Payments using Expected Return Rate (v) | Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf) | Present Value of Benefit Payments using Single Discount Rate (sdr) |
|---|---|---|---|---|---|---|---|
| (a) | (b) | (c) | (d) | (e) | (f)=(d)*v^((a)-.5) | (g)=(e)*vf ^((a)-.5) | (h)=(c)/(1+sdr)^(a-.5) |
| 2023 | $ 2,442,114,254 | $ 293,755,375 | $ 293,755,375 | $ - | $ 284,076,977 | $ - | $ 284,076,977 |
| 2024 | 2,323,428,775 | 291,688,177 | 291,688,177 | - | 263,796,771 | - | 263,796,771 |
| 2025 | 2,260,725,699 | 289,543,042 | 289,543,042 | - | 244,886,146 | - | 244,886,146 |
| 2026 | 2,195,895,517 | 287,242,125 | 287,242,125 | - | 227,195,459 | - | 227,195,459 |
| 2027 | 2,128,951,913 | 283,707,379 | 283,707,379 | - | 209,856,575 | - | 209,856,575 |
| 2028 | 2,061,024,290 | 279,752,661 | 279,752,661 | - | 193,520,336 | - | 193,520,336 |
| 2029 | 1,992,478,737 | 275,128,971 | 275,128,971 | - | 177,987,351 | - | 177,987,351 |
| 2030 | 1,923,964,195 | 270,155,917 | 270,155,917 | - | 163,443,530 | - | 163,443,530 |
| 2031 | 1,855,844,079 | 264,817,932 | 264,817,932 | - | 149,830,791 | - | 149,830,791 |
| 2032 | 1,788,523,087 | 258,660,180 | 258,660,180 | - | 136,862,255 | - | 136,862,255 |
| 2033 | 1,722,904,294 | 252,023,335 | 252,023,335 | - | 124,708,284 | - | 124,708,284 |
| 2034 | 1,659,601,079 | 245,164,656 | 245,164,656 | - | 113,452,179 | - | 113,452,179 |
| 2035 | 1,599,003,303 | 237,761,917 | 237,761,917 | - | 102,895,814 | - | 102,895,814 |
| 2036 | 1,541,861,049 | 229,654,981 | 229,654,981 | - | 92,946,217 | - | 92,946,217 |
| 2037 | 1,489,141,973 | 221,425,188 | 221,425,188 | - | 83,807,581 | - | 83,807,581 |
| 2038 | 1,441,279,644 | 212,583,118 | 212,583,118 | - | 75,246,359 | - | 75,246,359 |
| 2039 | 1,399,243,771 | 203,737,352 | 203,737,352 | - | 67,441,591 | - | 67,441,591 |
| 2040 | 1,363,441,950 | 194,725,937 | 194,725,937 | - | 60,281,130 | - | 60,281,130 |
| 2041 | 1,334,477,494 | 185,493,912 | 185,493,912 | - | 53,701,656 | - | 53,701,656 |
| 2042 | 1,313,052,357 | 176,340,406 | 176,340,406 | - | 47,743,064 | - | 47,743,064 |
| 2043 | 1,299,607,821 | 167,137,665 | 167,137,665 | - | 42,318,787 | - | 42,318,787 |
| 2044 | 1,294,747,854 | 158,064,871 | 158,064,871 | - | 37,427,832 | - | 37,427,832 |
| 2045 | 1,221,023,798 | 149,135,475 | 149,135,475 | - | 33,024,839 | - | 33,024,839 |
| 2046 | 1,151,424,282 | 140,473,147 | 140,473,147 | - | 29,090,654 | - | 29,090,654 |
| 2047 | 1,085,958,969 | 132,077,948 | 132,077,948 | - | 25,579,434 | - | 25,579,434 |
| 2048 | 1,024,638,131 | 123,954,905 | 123,954,905 | - | 22,450,435 | - | 22,450,435 |
| 2049 | 967,467,551 | 116,134,238 | 116,134,238 | - | 19,670,788 | - | 19,670,788 |
| 2050 | 914,422,163 | 108,650,276 | 108,650,276 | - | 17,210,471 | - | 17,210,471 |
| 2051 | 865,439,668 | 101,506,284 | 101,506,284 | - | 15,036,795 | - | 15,036,795 |
| 2052 | 820,450,071 | 94,667,890 | 94,667,890 | - | 13,114,915 | - | 13,114,915 |
| 2053 | 779,414,071 | 88,118,923 | 88,118,923 | - | 11,416,484 | - | 11,416,484 |
| 2054 | 742,306,365 | 81,839,576 | 81,839,576 | - | 9,915,783 | - | 9,915,783 |
| 2055 | 709,120,375 | 75,819,000 | 75,819,000 | - | 8,590,969 | - | 8,590,969 |
| 2056 | 679,860,292 | 70,047,014 | 70,047,014 | - | 7,422,567 | - | 7,422,567 |
| 2057 | 654,541,121 | 64,507,647 | 64,507,647 | - | 6,392,580 | - | 6,392,580 |
| 2058 | 633,195,423 | 59,197,774 | 59,197,774 | - | 5,486,189 | - | 5,486,189 |
| 2059 | 615,861,245 | 54,115,653 | 54,115,653 | - | 4,690,171 | - | 4,690,171 |
| 2060 | 602,581,076 | 49,262,734 | 49,262,734 | - | 3,992,866 | - | 3,992,866 |
| 2061 | 593,398,848 | 44,642,930 | 44,642,930 | - | 3,383,914 | - | 3,383,914 |
| 2062 | 588,357,490 | 40,262,097 | 40,262,097 | - | 2,854,063 | - | 2,854,063 |
| 2063 | 587,496,852 | 36,127,508 | 36,127,508 | - | 2,395,000 | - | 2,395,000 |
| 2064 | 590,852,025 | 32,246,791 | 32,246,791 | - | 1,999,192 | - | 1,999,192 |
| 2065 | 598,452,643 | 28,626,823 | 28,626,823 | - | 1,659,746 | - | 1,659,746 |
| 2066 | 610,323,283 | 25,279,804 | 25,279,804 | - | 1,370,700 | - | 1,370,700 |
| 2067 | 626,477,609 | 22,202,492 | 22,202,492 | - | 1,125,825 | - | 1,125,825 |
| 2068 | 646,933,586 | 19,384,970 | 19,384,970 | - | 919,253 | - | 919,253 |
| 2069 | 671,720,674 | 16,832,245 | 16,832,245 | - | 746,470 | - | 746,470 |
| 2070 | 700,865,203 | 14,537,921 | 14,537,921 | - | 602,938 | - | 602,938 |
| 2071 | 734,401,939 | 12,493,020 | 12,493,020 | - | 484,550 | - | 484,550 |
| 2072 | 772,377,341 | 10,686,343 | 10,686,343 | - | 387,615 | - | 387,615 |

# Single Discount Rate Development
# Present Values of Projected Benefits
# End of Year (Concluded)

| Fiscal Year Ending June 30, | Projected Beginning Plan Net Position With Annuity Reserve | Projected Benefit Payments | Funded Portion of Benefit Payments | Unfunded Portion of Benefit Payments | Present Value of Funded Benefit Payments using Expected Return Rate (v) | Present Value of Unfunded Benefit Payments using Municipal Bond Rate (vf) | Present Value of Benefit Payments using Single Discount Rate (sdr) |
|---|---|---|---|---|---|---|---|
| (a) | (b) | (c) | (d) | (e) | (f)=(d)*v^((a)-.5) | (g)=(e)*vf ^((a)-.5) | (h)=(c)/(1+sdr)^(a-.5) |
| 2073 | $ 814,852,668 | $ 9,104,637 | $ 9,104,637 | $ - | $ 308,841 | $ - | $ 308,841 |
| 2074 | 861,907,130 | 7,732,684 | 7,732,684 | - | 245,303 | - | 245,303 |
| 2075 | 913,641,159 | 6,553,528 | 6,553,528 | - | 194,423 | - | 194,423 |
| 2076 | 970,179,687 | 5,548,907 | 5,548,907 | - | 153,950 | - | 153,950 |
| 2077 | 1,031,675,183 | 4,699,861 | 4,699,861 | - | 121,943 | - | 121,943 |
| 2078 | 1,098,310,290 | 3,987,300 | 3,987,300 | - | 96,750 | - | 96,750 |
| 2079 | 1,170,300,048 | 3,392,515 | 3,392,515 | - | 76,983 | - | 76,983 |
| 2080 | 1,247,893,744 | 2,897,804 | 2,897,804 | - | 61,496 | - | 61,496 |
| 2081 | 1,331,376,250 | 2,486,873 | 2,486,873 | - | 49,355 | - | 49,355 |
| 2082 | 1,421,069,024 | 2,145,085 | 2,145,085 | - | 39,813 | - | 39,813 |
| 2083 | 1,517,330,940 | 1,859,606 | 1,859,606 | - | 32,277 | - | 32,277 |
| 2084 | 1,620,559,013 | 1,619,506 | 1,619,506 | - | 26,288 | - | 26,288 |
| 2085 | 1,731,189,071 | 1,415,680 | 1,415,680 | - | 21,490 | - | 21,490 |
| 2086 | 1,849,696,561 | 1,240,746 | 1,240,746 | - | 17,614 | - | 17,614 |
| 2087 | 1,976,597,515 | 1,088,936 | 1,088,936 | - | 14,457 | - | 14,457 |
| 2088 | 2,112,449,687 | 955,809 | 955,809 | - | 11,867 | - | 11,867 |
| 2089 | 2,257,854,077 | 838,039 | 838,039 | - | 9,731 | - | 9,731 |
| 2090 | 2,413,456,774 | 733,192 | 733,192 | - | 7,962 | - | 7,962 |
| 2091 | 2,579,951,156 | 639,468 | 639,468 | - | 6,494 | - | 6,494 |
| 2092 | 2,758,080,518 | 555,527 | 555,527 | - | 5,276 | - | 5,276 |
| 2093 | 2,948,641,044 | 480,383 | 480,383 | - | 4,266 | - | 4,266 |
| 2094 | 3,152,485,119 | 413,237 | 413,237 | - | 3,432 | - | 3,432 |
| 2095 | 3,370,525,022 | 353,409 | 353,409 | - | 2,745 | - | 2,745 |
| 2096 | 3,603,736,956 | 300,360 | 300,360 | - | 2,182 | - | 2,182 |
| 2097 | 3,853,165,334 | 253,583 | 253,583 | - | 1,723 | - | 1,723 |
| 2098 | 4,119,927,469 | 212,597 | 212,597 | - | 1,351 | - | 1,351 |
| 2099 | 4,405,218,602 | 176,932 | 176,932 | - | 1,051 | - | 1,051 |
| 2100 | 4,710,317,292 | 146,091 | 146,091 | - | 812 | - | 812 |
| 2101 | 5,036,591,211 | 119,607 | 119,607 | - | 621 | - | 621 |
| 2102 | 5,385,503,300 | 97,040 | 97,040 | - | 472 | - | 472 |
| 2103 | 5,758,618,333 | 77,973 | 77,973 | - | 354 | - | 354 |
| 2104 | 6,157,609,954 | 62,003 | 62,003 | - | 264 | - | 264 |
| 2105 | 6,584,268,208 | 48,759 | 48,759 | - | 194 | - | 194 |
| 2106 | 7,040,507,574 | 37,900 | 37,900 | - | 141 | - | 141 |
| 2107 | 7,528,375,559 | 29,100 | 29,100 | - | 101 | - | 101 |
| 2108 | 8,050,061,893 | 22,070 | 22,070 | - | 72 | - | 72 |
| 2109 | 8,607,908,361 | 16,535 | 16,535 | - | 50 | - | 50 |
| 2110 | 9,204,419,312 | 12,237 | 12,237 | - | 35 | - | 35 |
| 2111 | 9,842,272,916 | 8,946 | 8,946 | - | 24 | - | 24 |
| 2112 | 10,524,333,178 | 6,453 | 6,453 | - | 16 | - | 16 |
| 2113 | 11,253,662,794 | 4,584 | 4,584 | - | 11 | - | 11 |
| 2114 | 12,033,536,885 | 3,198 | 3,198 | - | 7 | - | 7 |
| 2115 | 12,867,457,684 | 2,185 | 2,185 | - | 4 | - | 4 |
| 2116 | 13,759,170,242 | 1,457 | 1,457 | - | 3 | - | 3 |
| 2117 | 14,712,679,233 | 946 | 946 | - | 2 | - | 2 |
| 2118 | 15,732,266,926 | 596 | 596 | - | 1 | - | 1 |
| 2119 | 16,822,512,407 | 364 | 364 | - | 1 | - | 1 |
| 2120 | 17,988,312,141 | 214 | 214 | - | 0 | - | 0 |
| 2121 | 19,234,901,951 | 121 | 121 | - | 0 | - | 0 |
| 2122 | 20,567,880,531 | - | - | - | - | - | - |
| | | | | **Totals** | $ 3,205,964,135 | $ - | $ 3,205,964,135 |



Projection of Plan Net Position With Annuity Reserve and Benefit Payments
End of Year
$ [thousands]
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
1 4 7 10 13 16 19 22 25 28 31 34 37 40 43 46 49 52 55 58 61 64 67 70 73 76 79 82 85 88 91 94 97 100
Year
Projected Plan Net Position
Projected Benefit Payments for Current Members

# SECTION H

## GLOSSARY OF TERMS

# Glossary of Terms

| | |
|---|---|
| ***Actuarial Accrued Liability (AAL)*** | 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." |
| ***Actuarial Assumptions*** | 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. |
| ***Accrued Service*** | Service credited under the system which was rendered before the date of the actuarial valuation. |
| ***Actuarial Equivalent*** | 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. |
| ***Actuarial Cost Method*** | A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the pension trust benefits between future normal cost and actuarial accrued liability. The actuarial cost method may also be referred to as the actuarial funding method. |
| ***Actuarial Gain (Loss)*** | 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. |
| ***Actuarial Present Value (APV)*** | 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. |
| ***Actuarial Valuation*** | The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions. |
| ***Actuarial Valuation Date*** | The date as of which an actuarial valuation is performed. |
| ***Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)*** | A calculated contribution into a defined benefit pension plan for the reporting period, most often determined based on the funding policy of the plan. Typically, the Actuarially Determined Contribution has a normal cost payment and an amortization payment. |
| ***AFC*** | Average Final Compensation. |

# Glossary of Terms

| | |
|---|---|
| ***Amortization Payment*** | The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal. |
| ***Amortization Method*** | 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). |
| ***Cost-of-Living Adjustments*** | Postemployment benefit changes intended to adjust benefit payments for the effects of inflation. |
| ***Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)*** | A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan. |
| ***Covered-Employee Payroll*** | The payroll of covered employees, which is typically only the pensionable pay and does not include pay above any pay cap. |
| ***Deferred Retirement Option Program (DROP)*** | A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report. |
| ***Deferred Inflows and Outflows*** | The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources. |
| ***Discount Rate*** | 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:<br><br>1. The benefit payments to be made while the pension plans' fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and<br>2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate. |

# Glossary of Terms

| | |
|---|---|
| ***Entry Age Actuarial Cost Method (EAN)*** | The EAN is a funding 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. |
| ***GASB*** | The Governmental Accounting Standards Board is an organization that exists in order to promulgate accounting standards for governmental entities. |
| ***Fiduciary Net Position*** | The fiduciary net position is the value of the assets of the trust. |
| ***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. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. |
| ***Multiple-Employer Defined Benefit Pension Plan*** | A multiple-employer plan is a defined benefit pension plan that is used to provide pensions 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 Pension Liability (NPL)*** | The NPL is the liability of employers and non-employer contribution entities to plan members for benefits provided through a defined benefit pension plan. |
| ***Non-Employer Contribution Entities*** | Non-employer contribution entities are entities that make contributions to a pension plan that is used to provide pensions to the employees of other entities. For purposes of the GASB Accounting statement plan members are not considered non-employer contribution entities. |
| ***Normal Cost*** | The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method. Also known as service cost. |

# Glossary of Terms

| | |
|---|---|
| ***Other Postemployment Benefits (OPEB)*** | 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. |
| ***PERSIA*** | Public Employees Retirement System Investment Act (Michigan PA 314). |
| ***PFRS*** | Police and Fire Retirement System |
| ***POA*** | The 8th Amended Plan for the Adjustment of the Debt of the City of Detroit. |
| ***Real Rate of Return*** | The real rate of return is the rate of return on an investment after adjustment to eliminate inflation. |
| ***Service Cost*** | The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year. Also known as normal cost. |
| ***Total Pension Expense*** | The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year:<br>1. Service Cost<br>2. Interest on the Total Pension Liability<br>3. Current-Period Benefit Changes<br>4. Employee Contributions (made negative for addition here)<br>5. Projected Earnings on Plan Investments (made negative for addition here)<br>6. Pension Plan Administrative Expense<br>7. Other Changes in Plan Fiduciary Net Position<br>8. Recognition of Outflow (Inflow) of Resources due to Liabilities<br>9. Recognition of Outflow (Inflow) of Resources due to Assets |
| ***Total Pension Liability (TPL)*** | The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service. |
| ***Unfunded Actuarial Accrued Liability (UAAL)*** | The UAAL is the difference between actuarial accrued liability and valuation assets. |
| ***Valuation Assets*** | The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of the GASB Statement No. 67, the valuation asset is equal to the market value of assets. |

# APPENDIX

## MICHIGAN PUBLIC ACT 202

# State Reporting Assumptions for Fiscal Year 2022 Calculations as of June 30, 2021

The Protecting Local Government Retirement and Benefits Act, Public Act 202 of 2017 (PA 202), was put into law effective December 20, 2017. One outcome of the law is the requirement for the local unit of government to provide select reporting disclosures to the State. Sec. 5(1) of the Act provides the State treasurer with the authority to annually establish uniform actuarial assumptions for purposes of developing the requisite disclosures. Below you will find information which may be used to assist the local unit of government with required reporting.

Uniform Assumptions, as applicable to the measurement and the required disclosures under uniform assumptions are denoted below. Additional discussion of PA 202 and uniform assumptions published for Fiscal Year 2022 reporting may be found on the State website in the uniform assumptions memo dated December 17, 2021.

| | PA 202 | Assumptions Used for GASB | Uniform Assumptions Used for Fiscal Year 2021 |
|---|---|---|---|
| Investment Rate of Return Discount Rate | **Maximum of 6.85%^** | 6.88% | **6.85%^** |
| Salary Increase | Minimum of 3.00% or based on experience study within last 5 years | **N/A** | **N/A** |
| Mortality | Version of Pub-2010 with future mortality improvement projected generationally using Scale MP-2020 or based on experience study within last 5 years | **Version of Pub-2010 with future mortality improvement projected generationally using Scale MP-2021 based on the 2015-2020 Experience Study** | **Version of Pub-2010 with future mortality improvement projected generationally using Scale MP-2021 based on the 2015-2020 Experience Study** |
| Amortization of the Unfunded Accrued Actuarial Liability: Period | **Maximum Period of 17 Years** | N/A | **17 years** |
| Method | **Closed Plans: Level Dollar Open Plans: Level Percent of Payroll or Level Dollar** | Other | **Level Dollar** |

^ *A blended rate calculated using GASB Statement No. 68 methodology. For periods in which projected plan assets are sufficient to make projected benefit payments – maximum of 6.85%; for periods in which projected plan assets are NOT sufficient to make projected benefit payments – 2.16%.*

The calculations for PA 202 use a June 30, 2021 valuation date and a June 30, 2021 measurement date. With the exception of the assumptions and methods listed above, all other assumptions and methods are the same as those listed in the June 30, 2022 GASB report which has a valuation date of June 30, 2021. The 6.88% Investment Rate of Return was provided to us to be used for calculations performed for GASB reporting purposes with a measurement date of June 30, 2021, the same measurement date as the PA 202 calculations.

# State Reporting for Fiscal Year 2022
# Calculations as of June 30, 2021

The following information has been prepared to provide some of the information necessary to complete the pension reporting requirements for the State of Michigan's Local Government Retirement System Annual Report (Form 5572). The local unit of government is required to complete/develop all of the remaining reporting requirements necessary for Form 5572. Additional resources are available on the State website.

| Line | Descriptive Information | |
|---|---|---|
| **18** | **Actuarial Assumptions** | |
| 19 | Actuarial assumed Rate of Investment Return | 6.75% |
| 20 | Amortization method utilized for funding the system's unfunded actuarial accrued liability, if any | Other |
| 21 | Amortization period utilized for funding the system's unfunded actuarial accrued liability, if any | N/A |
| 22 | Is each division within the system closed to new employees? ~ | yes |
| **23** | **Uniform Assumptions^** | |
| 24 | Enter retirement pension system's actuarial value of assets using uniform assumptions+ | $ 2,749,073,539.00 |
| 25 | Enter retirement pension system's actuarial accrued liabilities using uniform assumptions | $ 3,306,102,660.00 |
| 26 | Funded ratio using uniform assumptions | 83.2% |
| 27 | Actuarially Determined Contribution (ADC) using uniform assumptions | $ 58,887,117.00 |
| 28 | All systems combined ADC/Governmental fund revenues | Auto* |

^ *Information on lines 24-28 is based on the Uniform Assumptions used, listed on the prior page, as of the most recent valuation date, June 30, 2021.*

+ *The actuarial value of assets is equal to the market value of assets as of the June 30, 2021.*

* *Automatically calculated by State of Michigan Form 5572.*

~ *This Component II plan is closed to new employees. The Component I plan is open to new employees and its PA 202 information is in the Component I GASB No. 68 report.*

October 27, 2022

Mr. David Cetlinski, Executive Director
The Police and Fire Retirement System
of the City of Detroit
One Detroit Center
500 Woodward Avenue, Suite 3000
Detroit, Michigan 48226-3534

Dear Mr. Cetlinski:

Please find enclosed 30 copies of the GASB Statement Nos. 67 and 68 Accounting and Financial Reporting for Pension Plans of Component II report of the Police and Fire Retirement System of the City of Detroit.

Sincerely,
Gabriel, Roeder, Smith & Company

Jamal J. Adora, ASA, EA, FCA, MAAA

JJA:rmn
Enclosures

cc: Judith A. Kermans, GRS
James R. Sparks, GRS