

Maryland Transit Administration Pension Plan

GASB Statement Nos. 67 and 68 Accounting and Financial
Reporting for Pensions
June 30, 2022





October 7, 2022

Ms. Laurie Brown
Deputy CFO
Maryland Transit Administration
6 St. Paul Street, 8th Floor
Baltimore, Maryland 21202

Dear Ms. Brown:

This report provides information on behalf of the Maryland Transit Administration (MTA) Pension Plan that is intended to comply with Governmental Accounting Standards Board (GASB) Statement Nos. 67 and 68 for the Maryland Transit Administration Pension Plan. These calculations have been made on a basis that is consistent with our understanding of these Statements.

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

The calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement Nos. 67 and 68. The calculation of the plan's liability for this report is not applicable for funding purposes of the plan.

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

The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation, nor is it an appropriate measure for assessing the need for or amount of future employer contributions.

This report is based upon information, provided to us by the MTA, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. This information was checked for internal consistency, but it was not audited. We are not responsible for the accuracy or completeness of the information provided by the MTA.

This report complements the actuarial valuation report that was provided to the Maryland Transit Administration Pension Plan and should be considered in conjunction with that report. Please see the actuarial valuation report as of July 1, 2022 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

The actuarial assumptions in this report are the same as those used in the July 1, 2022 actuarial valuation with the following exceptions:

- The actuarial cost method is the Entry-age Normal Cost method, as required by GASB.
- Projected benefits for purposes of calculating the Single Discount Rate (SDR) and resulting liabilities in this report included an assumed Cost-of-Living Adjustment (COLA) of 2.00%.

The actuarial assumptions used to value the liabilities are the same as those used for the June 30, 2021 GASB Statement No. 68 report with the following changes:

- The SDR increased from 3.26% to 5.29%. This change decreased the Total Pension Liability by about \$390M.

Actuarial assumptions were last reviewed in connection with a study conducted by the prior actuary of the 2014-2018 experience in the Experience Study report dated August 16, 2019, which includes the rationale for the assumptions.

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.

To the best of our knowledge, the information contained within this report is accurate and fairly represents the actuarial position of the Maryland Transit Administration Pension Plan. 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.



Ms. Laurie Brown

October 7, 2022

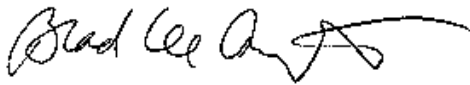
Page 3

This information is intended to assist in preparation of the financial statements of the Maryland Transit Administration Pension Plan. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.

The signing actuaries are independent of the plan sponsor.

Brad Lee Armstrong, Kevin T. Noelke and Derek Henning 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



Brad Lee Armstrong, ASA, EA, FCA, MAAA



Kevin T. Noelke, ASA, MAAA, FCA



Derek Henning, ASA, EA, MAAA

BLA/KTN/DH:ah

C201778



Auditor's Note – This information is intended to assist in preparation of the financial statements of the Maryland Transit Administration. Financial statements are the responsibility of management, subject to the auditor's review. Please let us know if the auditor recommends any changes.



Table of Contents

Page

Section A	Executive Summary	
	Executive Summary.....	1
	Discussion.....	2
Section B	Financial Statements	
	Statement of Pension Expense Under GASB Statement No. 68.....	6
	Statement of Outflows and Inflows Arising from Current Reporting Period	7
	Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods	8
	Recognition of Deferred Outflows and Inflows of Resources.....	9
	Statement of Fiduciary Net Position	10
	Statement of Changes of Fiduciary Net Position	11
Section C	Required Supplementary Information	
	Schedule of Changes in Net Pension Liability and Related Ratios Current Period	12
	Schedule of Changes in Net Pension Liability and Related Ratios Multiyear	13
	Schedule of the Net Pension Liability	14
	Schedule of Contributions Multiyear	15
	Notes to Schedule of Contributions.....	16
	Sensitivity of Net Pension Liability to the Single Discount Rate Assumption	17
Section D	Calculation of the Single Discount Rate	
	Calculation of the Single Discount Rate	18
	Projection of Contributions.....	19
	Projection of Plan Fiduciary Net Position	20
	Present Values of Projected Benefits.....	21
Section E	Glossary of Terms	23



SECTION A

EXECUTIVE SUMMARY

Executive Summary

Actuarial Valuation Date	July 1, 2022
Measurement Date of the Net Pension Liability	June 30, 2022
Employer's Fiscal Year Ending Date (Reporting Date)	June 30, 2022

Membership

Number of	
- Retirees and Beneficiaries	2,079
- Inactive, Nonretired Members	559
- Active Members	2,496
- Total	5,134
Covered Employee Payroll #	\$ 163,102,050

Net Pension Liability

Total Pension Liability	\$ 1,191,914,481
Plan Fiduciary Net Position	460,242,161
Net Pension Liability	\$ 731,672,320
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	38.61%
Net Pension Liability as a Percentage of Covered Employee Payroll	448.60%

Development of the Single Discount Rate

Single Discount Rate, End of Year	5.29%
Single Discount Rate, Beginning of Year	3.26%
Long-Term Expected Rate of Investment Return, End of Year	6.80%
Long-Term Expected Rate of Investment Return, Beginning of Year	6.80%
Long-Term Municipal Bond Rate, End of Year *	3.69%
Long-Term Municipal Bond Rate, Beginning of Year *	1.92%
Last year ending June 30 in the 2023 to 2122 projection period for which projected benefit payments are fully funded	2053

Total Pension Expense	\$ 32,808,780
------------------------------	---------------

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

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Difference between expected and actual experience	\$ 2,897,479	\$ 63,967,355
Changes in assumptions	144,681,306	374,162,461
Net difference between projected and actual earnings on pension plan investments	39,097,249	42,006,360
Total	<u>\$ 186,676,034</u>	<u>\$ 480,136,176</u>

*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, 2021 and 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.

Valuation payroll as of June 30, 2022.



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 is not included in this report if it is not actuarial in nature, such as the notes to the financial statements regarding accounting policies and investments. As a result, the retirement system and/or plan sponsor is responsible for preparing and disclosing the non-actuarial information needed to comply with these accounting standards.

Financial Statements

GASB Statement No. 68 requires state and local government employers that contribute to DB pension plans to recognize the Net Pension Liability and the pension expense on their financial statements, along with the related deferred outflows of resources and deferred inflows of resources. 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 Maryland Transit Administration Pension Plan 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 certain changes in the liability and investment experience. Please see page 6 for more details.

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 and inflows of resources related to pensions.

GASB Statement Nos. 67 and 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 benefits provided by the plan;
- The type of employees and number of members covered by the pension plan;
- A description of the plan's funding policy, which includes member and employer contribution requirements;
- The pension plan's investment policies;
- The pension plan's Fiduciary Net Position, 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;
- Significant assumptions and methods used to calculate the Total Pension Liability;
- Inputs to the discount rates; and
- Certain information about mortality assumptions and the dates of experience studies.

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

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

Required Supplementary Information

The financial statements of employers also include required supplementary information showing the 10-year fiscal history of:

- Sources of changes in the Net Pension Liability;
- Information about the components of the Net Pension Liability and related ratios, including the pension plan's Fiduciary Net Position as a percentage of the Total Pension Liability, and the Net Pension Liability as a percent of covered employee payroll; and
- A comparison of actual employer contributions to the actuarially determined contributions based on the plan's funding policy.

Discussion

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

Frequency and Timing of the Valuation

An actuarial valuation to determine the total pension liability is required to be performed at least every two years. For employer reporting, the net pension liability and pension expense should be measured as of a date (measurement date) no earlier than the end of the employer's prior fiscal year, consistently applied from period to period. If the actuarial valuation used to determine the total pension liability is not calculated as of the measurement date, the total pension liability is required to be rolled forward from the actuarial valuation date to the measurement date.

The Total Pension Liability shown in this report is based on an actuarial valuation performed as of July 1, 2022 and a measurement date of June 30, 2022.

Benefits Valued

The benefit provisions that were valued in this report are the same as those stated in the July 1, 2022 actuarial valuation. They are required to be performed on the current benefit terms and existing legal agreements. Consideration is to be given to the written plan document as well as other communications between the employer and plan members and an established pattern of practice for cost sharing. The summary of major plan provisions is designed to outline principal plan benefits. If the plan summary is not in accordance with the actual provisions, please alert the actuary IMMEDIATELY so they can both be sure the proper provisions are valued.

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 plan's projected Fiduciary Net Position is not sufficient to pay benefits).

For the purpose of this valuation, the expected rate of return on pension plan investments is 6.80%; the municipal bond rate is 3.69%; and the resulting Single Discount Rate is 5.29%.

Discussion

Actuarial Assumptions

The actuarial assumptions in this report are the same as those used in the July 1, 2022 actuarial valuation with the following exceptions:

- The actuarial cost method is the Entry-age Normal Cost method, as required by GASB.
- Projected benefits for purposes of calculating the Single Discount Rate (SDR) and resulting liabilities in this report included an assumed Cost-of-Living Adjustment (COLA) of 2.00%.

The actuarial assumptions used to value the liabilities are the same as those used for the June 30, 2021 GASB Statement No. 68 report with the following changes:

- The SDR increased from 3.26% to 5.29%. This change decreased the Total Pension Liability by about \$390M.

Actuarial assumptions were last reviewed in connection with a study conducted by the prior actuary of the 2014-2018 experience in the Experience Study report dated August 16, 2019, which includes the rationale for the assumptions.

General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the plan earning 6.80% on the actuarial value of assets), then the following outcomes are expected:

1. The employer normal cost as a percentage of pay is expected to remain level as a percentage of payroll.
2. The unfunded liability is not expected to be fully amortized during the lifetimes of current members.
3. The funded status of the plan is expected to increase gradually towards a 100% funded ratio.

This funding policy results in an expected crossover date in 2053 and a GASB single discount rate of 5.29%. The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

SECTION B

FINANCIAL STATEMENTS

Statement of Pension Expense Under GASB Statement No. 68

Fiscal Years Ended June 30

A. Expense	2022	2021
1. Service Cost	\$ 50,802,171	\$ 43,826,625
2. Interest on the Total Pension Liability	51,484,768	56,405,792
3. Current-Period Benefit Changes	-	-
4. Employee Contributions (made negative for addition here)	(6,832,690)	(7,311,254)
5. Projected Earnings on Plan Investments (made negative for addition here)	(31,232,602)	(25,532,868)
6. Pension Plan Administrative Expense	4,135,115	3,602,429
7. Other Changes in Plan Fiduciary Net Position	-	-
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	(32,125,803)	46,133,185
9. Recognition of Outflow (Inflow) of Resources due to Assets	(3,422,179)	(13,395,767)
10. Total Pension Expense	\$ 32,808,780	\$ 103,728,142

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	\$ (50,063,138)
2. Assumption Changes (gains) or losses	\$ (390,468,904)
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	6.0000
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	\$ (8,343,856)
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ (65,078,151)
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	<u>\$ (73,422,007)</u>
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	\$ (41,719,282)
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ (325,390,753)
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	<u>\$ (367,110,035)</u>

B. Outflows (Inflows) of Resources Due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ 42,218,424
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	\$ 8,443,685
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ 33,774,739

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	\$ 91,727,348	\$ 123,853,151	\$ (32,125,803)
2. Due to Assets	11,512,238	14,934,417	(3,422,179)
3. Total	\$ 103,239,586	\$ 138,787,568	\$ (35,547,982)

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	\$ 2,897,477	\$ 19,699,224	\$ (16,801,747)
2. Assumption Changes	88,829,871	104,153,927	(15,324,056)
3. Net Difference between projected and actual earnings on pension plan investments	11,512,238	14,934,417	(3,422,179)
4. Total	\$ 103,239,586	\$ 138,787,568	\$ (35,547,982)

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	\$ 2,897,479	\$ 63,967,355	\$ (61,069,876)
2. Assumption Changes	144,681,306	374,162,461	(229,481,155)
3. Net Difference between projected and actual earnings on pension plan investments	39,097,249	42,006,360	(2,909,111)
4. Total	\$ 186,676,034	\$ 480,136,176	\$ (293,460,142)

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	\$ (82,230,352)
2024	(51,386,536)
2025	(42,930,596)
2026	(43,490,651)
2027	(73,422,007)
Thereafter	-
Total	\$ (293,460,142)

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					
2016	\$ (15,023,996)	7.0000	\$ (2,146,286)	-	0.0000
2017	(20,741,099)	7.0000	(2,963,014)	(2,963,015)	1.0000
2018	17,384,864	6.0000	2,897,477	2,897,479	1.0000
2019	(8,527,580)	6.0000	(1,421,263)	(2,842,528)	2.0000
2020	(17,140,142)	6.0000	(2,856,690)	(8,570,072)	3.0000
2021	(11,808,688)	6.0000	(1,968,115)	(7,872,458)	4.0000
2022	(50,063,138)	6.0000	(8,343,856)	(41,719,282)	5.0000
Total			\$ (16,801,747)	\$ (61,069,876)	
Deferred Outflow (Inflow) Due to Assumption Changes					
2016	\$ 338,949,559	7.0000	\$ 48,421,363	-	0.0000
2017	(162,605,699)	7.0000	(23,229,386)	(23,229,383)	1.0000
2018	(36,902,711)	6.0000	(6,150,452)	(6,150,451)	1.0000
2019	(58,175,626)	6.0000	(9,695,938)	(19,391,874)	2.0000
2020	101,716,323	6.0000	16,952,721	50,858,160	3.0000
2021	140,734,720	6.0000	23,455,787	93,823,146	4.0000
2022	(390,468,904)	6.0000	(65,078,151)	(325,390,753)	5.0000
Total			\$ (15,324,056)	\$ (229,481,155)	
Deferred Outflow (Inflow) Due to Differences Between Projected and Actual Earnings on Plan Investments					
2018	\$ 2,036,482	5.0000	\$ 407,298	-	0.0000
2019	(6,992,230)	5.0000	(1,398,446)	(1,398,446)	1.0000
2020	13,306,275	5.0000	2,661,255	5,322,510	2.0000
2021	(67,679,856)	5.0000	(13,535,971)	(40,607,914)	3.0000
2022	42,218,424	5.0000	8,443,685	33,774,739	4.0000
Total			\$ (3,422,179)	\$ (2,909,111)	

According to paragraph 33 of GASB No. 68, differences between expected and actual experience and changes in assumptions are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the current measurement period, the expected remaining service lives of all active employees in the plan was approximately 30,540 years. Additionally, the total plan membership (active DB employees and inactive employees) was 5,090. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the current measurement period is 6.0000 years.

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

Statement of Fiduciary Net Position as of June 30, 2022

Assets

Cash and Cash Equivalents, Receivables and Payables	\$	10,867,013
Investments		
U.S. Government Obligations	\$	48,313,157
Domestic Corporate Obligations		27,855,202
International Obligations		10,470,051
Domestic Stocks		57,666,242
International Stocks		73,126,434
Mortgage and Mortgage Related Securities		10,893,763
Alternative Investments		218,471,738
Total Investments	\$	446,796,587
Receivables		
Accrued Investment Income	\$	1,501,544
Investment Sales Proceeds		5,316,175
Total Receivables	\$	6,817,719
Total Assets	\$	464,481,319
Liabilities		
Investment Purchases Payable	\$	4,239,158
Total Liabilities	\$	4,239,158
Net Position Held in Trust for Pension Benefits	\$	460,242,161

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

Additions

Contributions		
Employer	\$	68,605,836
Employee		<u>6,832,690</u>
Total Contributions	\$	<u>75,438,526</u>
Investment Income		
Net Appreciation (Depreciation) in Fair Value of Investments	\$	(38,679,252)
Interest Income		<u>27,693,430</u>
Total Investment Income	\$	<u>(10,985,822)</u>
Total Additions	\$	<u>64,452,704</u>

Deductions

Benefit Payments	\$	47,453,399
Administrative Expense		<u>4,135,115</u>
Total Deductions	\$	<u>51,588,514</u>

Net Increase in Net Position	\$	12,864,190
-------------------------------------	-----------	-------------------

Net Position Held in Trust for Pension Benefits

Beginning of Year	\$	<u>447,377,971</u>
End of Year	\$	<u><u>460,242,161</u></u>

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	\$ 50,802,171
2. Interest on the Total Pension Liability	51,484,768
3. Changes of benefit terms	-
4. Difference between expected and actual experience of the Total Pension Liability	(50,063,138)
5. Changes of assumptions	(390,468,904)
6. Benefit payments, including refunds of employee contributions	(47,453,399)
7. Net change in Total Pension Liability	\$ (385,698,502)
8. Total Pension Liability – Beginning	1,577,612,983
9. Total Pension Liability – Ending	<u><u>\$ 1,191,914,481</u></u>
B. Plan Fiduciary Net Position	
1. Contributions – employer	\$ 68,605,836
2. Contributions – employee	6,832,690
3. Net investment income	(10,985,822)
4. Benefit payments, including refunds of employee contributions	(47,453,399)
5. Pension Plan Administrative Expense	(4,135,115)
6. Other	-
7. Net change in Plan Fiduciary Net Position	\$ 12,864,190
8. Plan Fiduciary Net Position – Beginning	447,377,971
9. Plan Fiduciary Net Position – Ending	<u><u>\$ 460,242,161</u></u>
C. Net Pension Liability	<u><u>\$ 731,672,320</u></u>
D. Plan Fiduciary Net Position as a percentage of the Total Pension Liability	38.61%
E. Covered Employee Payroll *	\$ 163,102,050
F. Net Pension Liability as a percentage of Covered Employee Payroll	448.60%

* Covered Employee Payroll shown is the valuation payroll.

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	\$ 50,802,171	\$ 43,826,625	\$ 42,307,645	\$ 36,026,872	\$ 37,194,586	\$ 36,333,940	\$ 48,498,923	\$ 24,718,074	\$ 19,438,000
Interest on the Total Pension Liability	51,484,768	56,405,792	55,831,451	56,518,997	54,904,314	57,880,638	31,181,033	39,236,563	43,472,000
Benefit Changes	-	-	208,455	(202,648)	3,105,575	2,132,647	82,510,189	-	-
Difference between Expected and Actual Experience	(50,063,138)	(11,808,688)	(17,140,142)	(8,527,580)	17,384,864	(20,741,099)	(15,023,996)	(19,621,279)	4,025,000
Assumption Changes	(390,468,904)	140,734,720	101,716,323	(58,175,626)	(36,902,711)	(162,605,699)	338,949,559	53,480,106	38,643,000
Benefit Payments, including refunds of contributions	(47,453,399)	(44,735,513)	(44,432,068)	(42,723,850)	(37,203,253)	(39,062,347)	(35,283,202)	(30,636,207)	(32,598,000)
Net Change in Total Pension Liability	(385,698,502)	184,422,936	138,491,664	(17,083,835)	38,483,375	(126,061,920)	450,832,506	67,177,257	72,980,000
Total Pension Liability - Beginning	1,577,612,983	1,393,190,047	1,254,698,383	1,271,782,218	1,233,298,843	1,359,360,763	908,528,257	841,351,000	768,371,000
Total Pension Liability - Ending (a)	<u>\$ 1,191,914,481</u>	<u>\$ 1,577,612,983</u>	<u>\$ 1,393,190,047</u>	<u>\$ 1,254,698,383</u>	<u>\$ 1,271,782,218</u>	<u>\$ 1,233,298,843</u>	<u>\$ 1,359,360,763</u>	<u>\$ 908,528,257</u>	<u>\$ 841,351,000</u>
Plan Fiduciary Net Position									
Employer Contributions	\$ 68,605,836	\$ 59,279,675	\$ 43,249,926	\$ 41,597,059	\$ 40,997,059	\$ 40,997,059	\$ 40,997,059	\$ 35,400,000	\$ 39,749,000
Employee Contributions	6,832,690	7,311,254	4,609,744	3,005,759	3,315,683	3,094,029	-	-	-
Pension Plan Net Investment Income	(10,985,822)	93,212,724	12,831,812	31,023,630	20,550,290	27,740,945	12,767,932	14,044,525	15,783,000
Benefit Payments, including refunds of contributions	(47,453,399)	(44,735,513)	(44,432,068)	(42,723,850)	(37,203,253)	(39,062,347)	(35,283,202)	(30,636,207)	(32,598,000)
Pension Plan Administrative Expense	(4,135,115)	(3,602,429)	(2,651,571)	(2,325,372)	(2,213,277)	(1,914,322)	(1,967,196)	(1,850,637)	(1,587,000)
Other	-	-	-	(6,719,636)	-	(2,630,692)	-	-	-
Net Change in Plan Fiduciary Net Position	12,864,190	111,465,711	13,607,843	23,857,590	25,446,502	28,224,672	16,514,593	16,957,681	21,347,000
Plan Fiduciary Net Position - Beginning	447,377,971	335,912,260	322,304,417	298,446,827	273,000,325	244,775,653	228,261,060	211,303,379	189,957,000
Plan Fiduciary Net Position - Ending (b)	<u>\$ 460,242,161</u>	<u>\$ 447,377,971</u>	<u>\$ 335,912,260</u>	<u>\$ 322,304,417</u>	<u>\$ 298,446,827</u>	<u>\$ 273,000,325</u>	<u>\$ 244,775,653</u>	<u>\$ 228,261,060</u>	<u>\$ 211,303,000</u>
Net Pension Liability - Ending (a) - (b)	731,672,320	1,130,235,012	1,057,277,787	932,393,966	973,335,391	960,298,518	1,114,585,110	680,267,197	630,048,000
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	38.61 %	28.36 %	24.11 %	25.69 %	23.47 %	22.14 %	18.01 %	25.12 %	25.11 %
Covered Employee Payroll*	\$ 163,102,050	\$ 164,552,701	\$ 149,767,952	\$ 148,444,632	\$ 145,833,561	\$ 137,153,770	\$ 137,427,168	\$ 135,544,813	\$ 137,596,326
Net Pension Liability as a Percentage of Covered Employee Payroll	448.60 %	686.85 %	705.94 %	628.11 %	667.43 %	700.16 %	811.04 %	501.88 %	457.90 %

Notes to Schedule:

* Covered Employee Payroll shown is the valuation payroll.
Results prior to FYE 2021 were not calculated by GRS.



Schedule of Required Supplementary Information Schedule of the Net Pension Liability

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 Employee Payroll *	Net Pension Liability as a % of Covered Employee Payroll
2014	\$ 841,351,000	\$ 211,303,379	\$ 630,047,621	25.11%	\$ 137,596,326	457.90%
2015	908,528,257	228,261,060	680,267,197	25.12%	135,544,813	501.88%
2016	1,359,360,763	244,775,653	1,114,585,110	18.01%	137,427,168	811.04%
2017	1,233,298,843	273,000,325	960,298,518	22.14%	137,153,770	700.16%
2018	1,271,782,218	298,446,827	973,335,391	23.47%	145,833,561	667.43%
2019	1,254,698,383	322,304,417	932,393,966	25.69%	148,444,632	628.11%
2020	1,393,190,047	335,912,260	1,057,277,787	24.11%	149,767,952	705.94%
2021	1,577,612,983	447,377,971	1,130,235,012	28.36%	164,552,701	686.85%
2022	1,191,914,481	460,242,161	731,672,320	38.61%	163,102,050	448.60%

* Covered Employee Payroll shown is the valuation payroll.

Results prior to FYE 2021 were not calculated by GRS.



Schedule of Contributions Multiyear

Ultimately 10 Fiscal Years will be Displayed

FY Ending June 30,	Actuarially Determined Contribution #	Actual Contribution	Contribution Deficiency (Excess)	Covered Employee Payroll *	Actual Contribution as a % of Covered Employee Payroll
2013	\$ 34,582,249	\$ 29,518,757	\$ 5,063,492	\$ 152,276,494	19.38%
2014	39,748,933	39,748,933	-	137,596,326	28.89%
2015	40,807,270	35,400,000	5,407,270	135,544,813	26.12%
2016	44,736,075	40,997,059	3,739,016	137,427,168	29.83%
2017	62,217,185	40,997,059	21,220,126	137,153,770	29.89%
2018	66,495,406	40,997,059	25,498,347	145,833,561	28.11%
2019	64,648,783	41,597,059	23,051,724	148,444,632	28.02%
2020	55,213,341	43,249,926	11,963,415	149,767,952	28.88%
2021	58,841,684	59,279,675	(437,991)	164,552,701	36.02%
2022	53,638,723	68,605,836	(14,967,113)	163,102,050	42.06%

* Covered Employee Payroll shown is the valuation payroll.

Contribution rates for FYE 2021 and prior were not calculated by GRS.

Notes to Schedule of Contributions

Valuation Date:	July 1, 2021
Notes	Actuarially determined contribution amounts are calculated as of July 1 each year, which is the beginning of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates for FY Ending June 30, 2022:

Actuarial Cost Method	Entry-Age - Level Dollar Normal Cost
Amortization Method	Level dollar, closed
Remaining Amortization Periods	1-23 years
Asset Valuation Method	5-Year smoothed market for funding
Wage Inflation	3.10%
Salary Increases	3.10% to 9.10% including inflation
Investment Rate of Return	7.40%
Retirement Age	Age-based table of rates that are specific to the type of eligibility condition.
Mortality	Pre-retirement: RP-2014 Blue Collar Employee mortality table, sex distinct, with generational mortality improvements from 2006 using scale MP-2018. Post-retirement Healthy lives: RP-2014 Blue Collar Healthy Retiree mortality table, sex distinct, with generational mortality improvements from 2006 using scale MP-2018. Post-retirement Disabled lives: RP-2014 Disabled Retiree mortality table, sex distinct, with generational mortality improvements from 2006 using scale MP-2018.

Other Information:

Notes	N/A
-------	-----

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

Single Discount Rate

The Single Discount Rate used to measure the June 30, 2021 total pension liability was 3.26%. A Single Discount Rate of 5.29% was used to measure the June 30, 2022 total pension liability. This Single Discount Rate was based on a municipal bond rate of 3.69% and an expected rate of return on pension plan investments of 6.80%. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's Fiduciary Net Position and future contributions were sufficient to finance the benefit payments through the year 2053.

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 5.29%, as well as what the plan's Net Pension Liability would be if it were calculated using a Single Discount Rate that is 1-percentage-point lower or 1-percentage-point higher:

	1% Decrease 4.29%	Current Single Discount Rate 5.29%	1% Increase 6.29%
Total Pension Liability	\$ 1,357,783,913	\$ 1,191,914,481	\$ 1,054,670,681
Plan Fiduciary Net Position	460,242,161	460,242,161	460,242,161
Net Pension Liability/(Asset)	\$ 897,541,752	\$ 731,672,320	\$ 594,428,520

SECTION D

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate

GASB Statement No. 68 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 Fiduciary 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 6.80%; the municipal bond rate is 3.69%; and the resulting Single Discount Rate is 5.29%.

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

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

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

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

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

Single Discount Rate Development

Projection of Contributions Ending June 30, 2072

Year	Covered Employee Payroll	Service Cost		UAL Contributions	Total Contributions
		Contributions and Contributions from Current Employees	Administrative Expense Contributions		
0	\$ 163,102,050				
1	166,404,660	\$ 13,593,566	\$ 4,218,846	\$ 53,160,599	\$ 70,973,011
2	159,711,912	12,677,681	4,049,165	54,347,150	71,073,996
3	154,169,881	11,917,926	3,908,658	54,966,575	70,793,159
4	148,772,890	11,218,507	3,771,829	35,272,248	50,262,584
5	143,513,250	10,576,583	3,638,482	36,418,569	50,633,634
6	137,990,742	9,960,994	3,498,470	36,418,569	49,878,034
7	132,604,385	9,382,709	3,361,910	36,418,569	49,163,189
8	127,104,422	8,822,682	3,222,470	36,418,569	48,463,722
9	121,897,303	8,294,252	3,090,454	36,418,569	47,803,275
10	116,659,185	7,782,453	2,957,652	36,386,780	47,126,885
11	111,615,562	7,299,571	2,829,782	36,380,809	46,510,163
12	106,560,422	6,830,284	2,701,619	36,380,809	45,912,712
13	101,673,245	6,386,205	2,577,715	36,380,809	45,344,730
14	96,928,104	5,964,819	2,457,412	36,380,809	44,803,040
15	92,155,842	5,557,473	2,336,421	36,380,809	44,274,704
16	87,435,596	5,165,698	2,216,749	36,380,809	43,763,256
17	82,652,203	4,782,624	2,095,476	36,380,809	43,258,909
18	77,685,679	4,403,990	1,969,560	33,782,403	40,155,953
19	72,833,863	4,046,220	1,846,552	30,262,887	36,155,659
20	67,848,004	3,695,672	1,720,146	33,044,748	38,460,566
21	62,913,451	3,360,237	1,595,040	33,885,328	38,840,605
22	58,003,981	3,037,296	1,470,571	33,475,189	37,983,056
23	53,122,136	2,727,303	1,346,802	889,401	4,963,506
24	48,207,168	2,425,998	1,222,193	1,146,321	4,794,512
25	43,280,888	2,136,184	1,097,297	-	3,233,481
26	38,410,178	1,859,430	973,811	-	2,833,241
27	33,721,903	1,602,011	854,949	-	2,456,960
28	29,142,347	1,358,448	738,844	-	2,097,292
29	24,980,740	1,143,109	633,335	-	1,776,444
30	21,137,426	949,264	535,896	-	1,485,160
31	17,705,277	780,637	448,881	-	1,229,518
32	14,735,808	638,364	373,596	-	1,011,960
33	12,137,647	516,525	307,725	-	824,250
34	9,957,110	416,582	252,442	-	669,024
35	8,117,416	333,922	205,800	-	539,722
36	6,592,364	266,498	167,136	-	433,634
37	5,318,262	211,274	134,834	-	346,108
38	4,285,006	166,968	108,637	-	275,605
39	3,393,701	129,761	86,040	-	215,801
40	2,638,617	99,050	66,897	-	165,947
41	2,019,295	74,314	51,195	-	125,509
42	1,494,244	54,049	37,883	-	91,932
43	1,109,698	39,338	28,134	-	67,472
44	794,389	27,628	20,140	-	47,768
45	565,568	19,324	14,339	-	33,663
46	399,831	13,423	10,137	-	23,560
47	280,355	9,227	7,108	-	16,335
48	190,921	6,162	4,840	-	11,002
49	134,641	4,257	3,414	-	7,671
50	93,756	2,875	2,377	-	5,252



Single Discount Rate Development Projection of Plan Fiduciary Net Position Ending June 30, 2072

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 6.80%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
1	\$ 460,242,161	\$ 70,973,011	\$ 49,589,893	\$ 4,218,846	\$ 31,870,455	\$ 509,276,888
2	509,276,888	71,073,996	53,560,794	4,049,165	35,081,077	557,822,002
3	557,822,002	70,793,159	57,122,327	3,908,658	38,258,352	605,842,528
4	605,842,528	50,262,584	60,592,672	3,771,829	40,725,712	632,466,323
5	632,466,323	50,633,634	64,039,502	3,638,482	42,437,732	657,859,705
6	657,859,705	49,878,034	67,299,471	3,498,470	44,034,880	680,974,678
7	680,974,678	49,163,189	70,532,142	3,361,910	45,479,257	701,723,072
8	701,723,072	48,463,722	73,610,321	3,222,470	46,768,483	720,122,486
9	720,122,486	47,803,275	76,573,419	3,090,454	47,902,883	736,164,772
10	736,164,772	47,126,885	79,356,329	2,957,652	48,882,518	749,860,194
11	749,860,194	46,510,163	82,012,464	2,829,782	49,708,636	761,236,746
12	761,236,746	45,912,712	84,538,993	2,701,619	50,382,058	770,290,905
13	770,290,905	45,344,730	86,863,460	2,577,715	50,905,159	777,099,618
14	777,099,618	44,803,040	89,130,383	2,457,412	51,278,252	781,593,115
15	781,593,115	44,274,704	91,207,373	2,336,421	51,500,731	783,824,756
16	783,824,756	43,763,256	93,122,906	2,216,749	51,575,325	783,823,681
17	783,823,681	43,258,909	94,961,289	2,095,476	51,500,964	781,526,789
18	781,526,789	40,155,953	96,652,420	1,969,560	51,188,668	774,249,430
19	774,249,430	36,155,659	98,230,699	1,846,552	50,511,369	760,839,206
20	760,839,206	38,460,566	99,743,964	1,720,146	49,630,174	747,465,836
21	747,465,836	38,840,605	101,066,106	1,595,040	48,693,463	732,338,758
22	732,338,758	37,983,056	102,243,305	1,470,571	47,600,941	714,208,878
23	714,208,878	4,963,506	103,306,241	1,346,802	45,232,500	659,751,842
24	659,751,842	4,794,512	104,315,607	1,222,193	41,494,184	600,502,738
25	600,502,738	3,233,481	105,195,684	1,097,297	37,387,788	534,831,027
26	534,831,027	2,833,241	105,902,326	973,811	32,889,226	463,677,357
27	463,677,357	2,456,960	106,452,102	854,949	28,023,784	386,851,049
28	386,851,049	2,097,292	106,761,508	738,844	22,781,103	304,229,092
29	304,229,092	1,776,444	106,827,639	633,335	17,153,397	215,697,959
30	215,697,959	1,485,160	106,615,938	535,896	11,133,877	121,165,162
31	121,165,162	1,229,518	106,076,818	448,881	4,718,037	20,587,018
32	20,587,018	1,011,960	105,201,093	373,596	-	-
33	-	824,250	103,972,968	307,725	-	-
34	-	669,024	102,424,643	252,442	-	-
35	-	539,722	100,557,258	205,800	-	-
36	-	433,634	98,434,870	167,136	-	-
37	-	346,108	96,099,671	134,834	-	-
38	-	275,605	93,594,464	108,637	-	-
39	-	215,801	90,971,471	86,040	-	-
40	-	165,947	88,234,647	66,897	-	-
41	-	125,509	85,396,284	51,195	-	-
42	-	91,932	82,460,543	37,883	-	-
43	-	67,472	79,434,337	28,134	-	-
44	-	47,768	76,336,381	20,140	-	-
45	-	33,663	73,169,842	14,339	-	-
46	-	23,560	69,950,397	10,137	-	-
47	-	16,335	66,695,551	7,108	-	-
48	-	11,002	63,411,355	4,840	-	-
49	-	7,671	60,106,044	3,414	-	-
50	-	5,252	56,795,813	2,377	-	-



Single Discount Rate Development Present Values of Projected Benefits Ending June 30, 2122

Year	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 _i)	Present Value of Benefit Payments Using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ^{(a)-5}	(g)=(e)*v _i ^{(a)-5}	(h)=(c)/(1+sdr) ^{(a)-5}
1	\$ 460,242,161	\$ 49,589,893	\$ 49,589,893	\$ -	\$ 47,985,226	\$ -	\$ 48,328,750
2	509,276,888	53,560,794	53,560,794	-	48,527,747	-	49,577,449
3	557,822,002	57,122,327	57,122,327	-	48,459,369	-	50,218,974
4	605,842,528	60,592,672	60,592,672	-	48,130,538	-	50,594,910
5	632,466,323	64,039,502	64,039,502	-	47,629,641	-	50,787,806
6	657,859,705	67,299,471	67,299,471	-	46,867,281	-	50,692,992
7	680,974,678	70,532,142	70,532,142	-	45,991,114	-	50,460,103
8	701,723,072	73,610,321	73,610,321	-	44,942,199	-	50,017,795
9	720,122,486	76,573,419	76,573,419	-	43,774,620	-	49,418,396
10	736,164,772	79,356,329	79,356,329	-	42,477,081	-	48,642,620
11	749,860,194	82,012,464	82,012,464	-	41,103,775	-	47,746,333
12	761,236,746	84,538,993	84,538,993	-	39,672,326	-	46,745,737
13	770,290,905	86,863,460	86,863,460	-	38,167,742	-	45,619,114
14	777,099,618	89,130,383	89,130,383	-	36,670,249	-	44,459,060
15	781,593,115	91,207,373	91,207,373	-	35,135,552	-	43,210,493
16	783,824,756	93,122,906	93,122,906	-	33,589,389	-	41,902,562
17	783,823,681	94,961,289	94,961,289	-	32,071,623	-	40,584,055
18	781,526,789	96,652,420	96,652,420	-	30,564,395	-	39,232,532
19	774,249,430	98,230,699	98,230,699	-	29,085,669	-	37,870,900
20	760,839,206	99,743,964	99,743,964	-	27,653,315	-	36,523,281
21	747,465,836	101,066,106	101,066,106	-	26,235,833	-	35,149,041
22	732,338,758	102,243,305	102,243,305	-	24,851,519	-	33,772,842
23	714,208,878	103,306,241	103,306,241	-	23,511,123	-	32,410,375
24	659,751,842	104,315,607	104,315,607	-	22,229,252	-	31,083,618
25	600,502,738	105,195,684	105,195,684	-	20,989,507	-	29,771,792
26	534,831,027	105,902,326	105,902,326	-	19,785,114	-	28,466,714
27	463,677,357	106,452,102	106,452,102	-	18,621,559	-	27,177,584
28	386,851,049	106,761,508	106,761,508	-	17,486,595	-	25,887,856
29	304,229,092	106,827,639	106,827,639	-	16,383,358	-	24,603,098
30	215,697,959	106,615,938	106,615,938	-	15,309,823	-	23,321,317
31	121,165,162	106,076,818	106,076,818	-	14,262,553	-	22,038,204
32	20,587,018	105,201,093	20,587,018	84,614,075	2,591,785	27,022,845	20,758,729
33	-	103,972,968	-	103,972,968	-	32,023,738	19,486,136
34	-	102,424,643	-	102,424,643	-	30,424,200	18,232,008
35	-	100,557,258	-	100,557,258	-	28,806,550	17,000,757
36	-	98,434,870	-	98,434,870	-	27,195,054	15,806,240
37	-	96,099,671	-	96,099,671	-	25,605,071	14,656,366
38	-	93,594,464	-	93,594,464	-	24,050,127	13,557,491
39	-	90,971,471	-	90,971,471	-	22,544,237	12,515,816
40	-	88,234,647	-	88,234,647	-	21,087,865	11,529,696
41	-	85,396,284	-	85,396,284	-	19,683,193	10,598,453
42	-	82,460,543	-	82,460,543	-	18,330,145	9,720,184
43	-	79,434,337	-	79,434,337	-	17,029,077	8,893,267
44	-	76,336,381	-	76,336,381	-	15,782,563	8,117,259
45	-	73,169,842	-	73,169,842	-	14,589,527	7,389,835
46	-	69,950,397	-	69,950,397	-	13,451,242	6,709,924
47	-	66,695,551	-	66,695,551	-	12,368,932	6,076,437
48	-	63,411,355	-	63,411,355	-	11,341,369	5,487,114
49	-	60,106,044	-	60,106,044	-	10,367,636	4,939,919
50	-	56,795,813	-	56,795,813	-	9,448,025	4,433,460



Single Discount Rate Development Present Values of Projected Benefits Ending June 30, 2122 (Concluded)

Year	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 _i)	Present Value of Benefit Payments Using Single Discount Rate (sdr)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v ^a ((a)-.5)	(g)=(e)*v ⁱ ((a)-.5)	(h)=(c)/(1+sdr) ^a ((a)-.5)
51	\$ -	\$ 53,485,147	\$ -	\$ 53,485,147	\$ -	\$ 8,580,667	\$ 3,965,377
52	-	50,184,433	-	50,184,433	-	7,764,616	3,533,825
53	-	46,907,153	-	46,907,153	-	6,999,277	3,137,183
54	-	43,656,386	-	43,656,386	-	6,282,391	2,773,150
55	-	40,444,588	-	40,444,588	-	5,613,074	2,440,118
56	-	37,290,567	-	37,290,567	-	4,991,171	2,136,851
57	-	34,207,781	-	34,207,781	-	4,415,618	1,861,765
58	-	31,210,152	-	31,210,152	-	3,885,309	1,613,320
59	-	28,314,847	-	28,314,847	-	3,399,438	1,390,157
60	-	25,536,430	-	25,536,430	-	2,956,760	1,190,788
61	-	22,887,709	-	22,887,709	-	2,555,768	1,013,681
62	-	20,379,373	-	20,379,373	-	2,194,689	857,264
63	-	18,020,358	-	18,020,358	-	1,871,582	719,966
64	-	15,818,292	-	15,818,292	-	1,584,412	600,251
65	-	13,779,005	-	13,779,005	-	1,331,035	496,611
66	-	11,906,488	-	11,906,488	-	1,109,222	407,574
67	-	10,202,875	-	10,202,875	-	916,686	331,719
68	-	8,668,042	-	8,668,042	-	751,073	267,666
69	-	7,299,495	-	7,299,495	-	609,982	214,087
70	-	6,092,411	-	6,092,411	-	490,994	169,711
71	-	5,039,403	-	5,039,403	-	391,678	133,329
72	-	4,130,832	-	4,130,832	-	309,636	103,803
73	-	3,355,391	-	3,355,391	-	242,560	80,083
74	-	2,700,314	-	2,700,314	-	188,258	61,212
75	-	2,152,228	-	2,152,228	-	144,708	46,338
76	-	1,698,133	-	1,698,133	-	110,113	34,725
77	-	1,325,645	-	1,325,645	-	82,900	25,747
78	-	1,023,122	-	1,023,122	-	61,705	18,873
79	-	779,924	-	779,924	-	45,364	13,665
80	-	586,517	-	586,517	-	32,900	9,760
81	-	434,548	-	434,548	-	23,508	6,868
82	-	316,777	-	316,777	-	16,527	4,755
83	-	226,874	-	226,874	-	11,415	3,235
84	-	159,342	-	159,342	-	7,732	2,158
85	-	109,543	-	109,543	-	5,126	1,409
86	-	73,606	-	73,606	-	3,322	899
87	-	48,273	-	48,273	-	2,101	560
88	-	30,849	-	30,849	-	1,295	340
89	-	19,184	-	19,184	-	777	201
90	-	11,610	-	11,610	-	453	115
91	-	6,841	-	6,841	-	258	65
92	-	3,922	-	3,922	-	142	35
93	-	2,187	-	2,187	-	77	19
94	-	1,190	-	1,190	-	40	10
95	-	634	-	634	-	21	5
96	-	329	-	329	-	10	2
97	-	165	-	165	-	5	1
98	-	78	-	78	-	2	1
99	-	34	-	34	-	1	-
100	-	22	-	22	-	1	-
Totals					\$ 1,030,756,874	\$ 451,137,796	\$ 1,481,894,670



SECTION E

GLOSSARY OF TERMS

Glossary of Terms

<i>Accrued Service</i>	Service credited under the system which was rendered before the date of the actuarial valuation.
<i>Actuarial Accrued Liability (AAL)</i>	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."
<i>Actuarial Assumptions</i>	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.
<i>Actuarial Cost Method</i>	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.
<i>Actuarial Equivalent</i>	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.
<i>Actuarial Gain (Loss)</i>	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.
<i>Actuarial Present Value (APV)</i>	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.
<i>Actuarial Valuation</i>	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.
<i>Actuarial Valuation Date</i>	The date as of which an actuarial valuation is performed.
<i>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</i>	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

<i>Amortization Method</i>	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).
<i>Amortization Payment</i>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<i>Cost-of-Living Adjustments</i>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<i>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</i>	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.
<i>Covered Employee Payroll</i>	The payroll of employees that are provided with pensions through the pension plan.
<i>Deferred Inflows and Outflows</i>	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.
<i>Deferred Retirement Option Program (DROP)</i>	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.
<i>Discount Rate</i>	For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically: <ol style="list-style-type: none">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; and2. 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 cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit age(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.

Fiduciary Net Position

The Fiduciary Net Position is the market value of the assets of the trust dedicated to the defined benefit provisions.

GASB

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

Long-Term Expected Rate of Return

The long-term rate of return is the expected return to be earned over the entire trust portfolio based on the asset allocation of the portfolio.

Money-Weighted Rate of Return

The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For GASB purposes, 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 contributing entities to plan members for benefits provided through a defined benefit pension plan.

Non-Employer Contributing Entities

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

Normal Cost

The portion of the actuarial present value allocated to a valuation year is called the normal cost. For purposes of application to the requirements of this Statement, the term normal cost is the equivalent of service cost.



Glossary of Terms

<i>Other Postemployment Benefits (OPEB)</i>	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.
<i>Real Rate of Return</i>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<i>Service Cost</i>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<i>Total Pension Expense</i>	The total pension expense is the sum of the following items that are recognized at the end of the employer's fiscal year: <ol style="list-style-type: none">1. Service Cost2. Interest on the Total Pension Liability3. Current-Period Benefit Changes4. Employee Contributions (made negative for addition here)5. Projected Earnings on Plan Investments (made negative for addition here)6. Pension Plan Administrative Expense7. Other Changes in Plan Fiduciary Net Position8. Recognition of Outflow (Inflow) of Resources due to Liabilities9. Recognition of Outflow (Inflow) of Resources due to Assets
<i>Total Pension Liability (TPL)</i>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<i>Unfunded Actuarial Accrued Liability (UAAL)</i>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<i>Valuation Assets</i>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement No. 68, the valuation assets are equal to the market value of assets.