

Employees' Retirement System of the State of Hawaii

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

June 30, 2023



Table of Contents

	<u>Section/Page</u>
Cover Letter	
Section A	Executive Summary
	Executive Summary Table A-1
	Discussion..... A-2 – A-4
Section B	Financial Statements
	Statement of Fiduciary Net PositionB-1
	Statement of Changes in Fiduciary Net PositionB-2
Section C	Required Supplementary Information
	Schedule of Changes in Net Pension Liability and Related RatiosC-1
	Schedule of the Employers’ Net Pension LiabilityC-2
	Schedule of Changes in the Employers’ Net Pension LiabilityC-3
Section D	Notes to Financial Statements
	Sensitivity of the Net Pension Liability to the Discount Rate Assumption D-1
	Summary of Population Statistics D-1
Section E	Calculation of the Single Discount Rate
	Calculation of the Single Discount Rate E-1
	Projection of Contributions..... E-2 – E-3
	Projection of Plan Fiduciary Net Position E-4 – E-5
	Present Values of Projected Benefit Payments E-6 – E-7
	Projection of Plan Net Position and Benefit Payments E-8
Section F	GASB No. 68 Information
	Aggregate Pension Expense F1
	Schedule of Current Period Deferred Outflows and Inflows F2
	Schedule of Current and Prior Period Deferred Outflows and Inflows F3
	Net Deferred Outflows and (Inflows) to be Recognized in Future Years..... F3
	Recognition of Deferred Outflows and Inflows of Resources..... F4
	Schedule of Employer Allocations F-5 – F-7
Section G	Glossary of Terms
	Glossary of Terms.....G-1 – G-4





May 14, 2024

The Board of Trustees
Employees' Retirement System of
The State of Hawaii
City Financial Tower
201 Merchant St., Ste. 1400
Honolulu, HI 96813-9280

Dear Trustees:

This report provides information required by the Employees' Retirement System of the State of Hawaii ("ERS") in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67 "Financial Reporting for Pension Plans." Additionally, this report provides information required by the employers covered by ERS in connection with the GASB Statement No. 68, "Accounting and Financial Reporting for Pensions." The GASB 68 information shown was determined as of June 30, 2023, but it is intended that the employers covered by ERS will use this information in financial reporting for their fiscal years ending June 30, 2024.

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 may not be applicable for funding purposes of the plan. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the ERS only in its entirety and only with the permission of ERS.

This report is based upon information, furnished to us by ERS, 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 otherwise audited.

Certain tables included in the Required Supplementary Information should include a 10-year history of information. As provided for in GASB No. 67, this historical information is only presented for the years in which the information was measured in conformity with the requirements of GASB No. 67. The historical information in this report will begin with the information presented for the fiscal year ending June 30, 2014.

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

Section F contains both the aggregate GASB No. 68 information on a plan wide level and the schedules with the individual employers' information.

This report complements the actuarial valuation report that was provided to ERS and should be considered in conjunction with that report. Please see the actuarial valuation report as of June 30, 2023 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, this report is complete, accurate, and in accordance with generally recognized actuarial methods. One or more of the undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the Academy of Actuaries to render the actuarial opinion herein.

The signing actuaries are independent of the plan sponsor.

Respectfully submitted,



By _____
Lewis Ward
Consultant



By _____
Joseph P. Newton, FSA, EA
Pension Market Leader & Actuary



SECTION A

EXECUTIVE SUMMARY

Executive Summary as of June 30, 2023

	2023
Actuarial Valuation Date	June 30, 2023
Pension Plan's Fiscal Year Ending Date (Measurement Date & Reporting Date)	June 30, 2023
 Membership	
Number of	
- Retirees and Beneficiaries	54,973
- Inactive, Nonretired Members	35,897
- Active Members	64,243
- Total	155,113
Reported Payroll for Fiscal Year	\$ 4,674,478,467
 Net Pension Liability	
Total Pension Liability	\$ 36,224,617,253
Plan Fiduciary Net Position	22,425,384,975
Net Pension Liability	\$ 13,799,232,278
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	61.91%
Net Pension Liability as a Percentage of Covered Payroll	295.20%
 Development of the Single Discount Rate	
Single Discount Rate	7.00%
Long-Term Expected Rate of Return	7.00%
Long-Term Municipal Bond Rate*	3.86%
Last year ending June 30 in the 2023 to 2122 projection period for which projected benefit payments are fully funded	None

**Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity's Index's "20-year Municipal GO AA Index" as of June 30, 2023. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax exempt securities.*



Discussion

Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67, “Financial Reporting for Pension Plans,” replaces the requirements of GASB Statement No. 25, “Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans,” and GASB Statement No. 50, “Pension Disclosures.” GASB Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability of employers and non-employer contributing entities for benefits provided through the pension plan.

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 will be responsible for preparing and disclosing that information to comply with these accounting standards.

Financial Statements

GASB Statement No. 67 requires defined benefit pension plans to present two financial statements – a statement of fiduciary net position and a statement of changes in fiduciary net position.

The *statement of fiduciary net position* presents the following items as of the end of the pension plan’s reporting period, such as:

- assets;
- deferred inflows and outflows of resources;
- liabilities; and
- fiduciary net position (assets, plus deferred outflows, minus liabilities, minus deferred inflows).

The *statement of changes in fiduciary net position* presents the following for the plan’s reporting period:

- additions, such as contributions and investment income;
- deductions, such as benefit payments and expenses; and
- net increase or decrease in the fiduciary net position (the difference between additions and deductions).

Notes to Financial Statements

GASB Statement No. 67 also requires the notes of the plan's financial statements to include additional disclosure information. This disclosure information 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;
- the composition of the pension plan's Board and the authority under which benefit terms may be amended;
- a description of the plan's funding policy, which includes member and employer contribution requirements;
- the pension plan's investment policies;
- a description of how fair value is determined;
- concentrations of investments greater than or equal to 5%;
- annual money-weighted rate of return on pension plan investments;
- the portion of the present value of benefits to be provided through the pension plan to current active and inactive plan members;
- the pension plan's fiduciary net position;
- the net pension liability;
- the pension plan's fiduciary net position as a percentage of the total pension liability;
- 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.

Required Supplementary Information

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.

As shown above, you will need to include a determination of the annual money-weighted rate of return for your Notes to Financial Statements and Required Supplementary Information. Statement No. 67 requires that this information be determined using cash-flows with a frequency of not less than a monthly basis. We do not have the detailed financial information to determine this number. If you need our assistance please let us know.



Measurement of the Net Pension Liability

The net pension liability is to be measured as the total pension liability, less the amount of the pension plan's fiduciary net position. In actuarial terms, this will be 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).

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, 2023 and a measurement date of June 30, 2023.

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 7.00% the municipal bond rate is 3.86% (based on the daily rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index"); and the resulting single discount rate is 7.00%.

Effective Date and Transition

GASB Statements No. 67 is effective for a pension plan's fiscal years beginning after June 15, 2013, however, earlier application is encouraged by the GASB. GASB Statement No. 68 is effective for an employer's fiscal year beginning after June 30, 2014.



SECTION B

FINANCIAL STATEMENTS

Statement of Fiduciary Net Position as of June 30, 2023

	2023
Assets	
Cash and Deposits	\$ 497,906,509
Receivables	
Accounts receivable and others	\$ 3,589,353
Investment sales proceeds	15,982,313
Accrued investment income	28,989,788
Employer and Member contributions	151,378,373
Other	0
Total Receivables	\$ 199,939,827
Investments	
Equity securities	\$ 5,288,938,937
Fixed income securities	3,525,645,635
Real asset investments	3,774,821,802
Alternative investments	9,369,579,364
Total Investments	\$ 21,958,985,738
Invested Securities Lending Collateral	\$ 491,507,300
Equipment at cost, net of depreciation	\$ 4,010,465
Total Assets	\$ 23,152,349,839
 Liabilities	
Payables	
Accounts and other payables	\$ 202,903,305
Payables for securities purchased	32,554,259
Securities lending collateral	491,507,300
Notes payable	0
Total Liabilities	\$ 726,964,864
 Net Position Restricted for Pensions	 \$ 22,425,384,975



Statement of Changes in Fiduciary Net Position for Year Ended June 30, 2023

	Year Ending June 30, 2023
Additions	
Contributions	
Non-Employer Contributing Entity	\$ 0
Employer	1,274,221,056
Employer (picked-up employee contributions)	309,509,309
Employee	251,744
Other	0
Total Contributions	\$ 1,583,982,109
Investment Income	
Net Appreciation in Fair Value of Investments	\$ 473,600,753
Interest and Dividends	246,371,493
Less Investment Expense	(153,900,913)
Net Investment Income	\$ 566,071,333
Other	\$ 260,831,542
Total Additions	\$ 2,410,884,984
Deductions	
Benefit payments, including refunds of employee contributions	\$ 1,821,764,569
Pension Plan Administrative Expense	18,549,472
Other	0
Total Deductions	\$ 1,840,314,041
Net Increase in Net Position	\$ 570,570,943
Net Position Restricted for Pensions	
Beginning of Year	\$ 21,854,814,032
End of Year	\$ 22,425,384,975



SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in the Net Pension Liability and Related Ratios Fiscal Year Ended June 30, 2023

A. Total pension liability	
1. Service Cost	\$ 665,262,225
2. Interest on the Total Pension Liability	2,397,116,921
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the Total Pension Liability	161,224,056
5. Changes of assumptions	0
6. Benefit payments, including refunds of employee contributions	(1,821,764,569)
7. Net change in total pension liability	\$ 1,401,838,633
8. Total pension liability – beginning	34,822,778,620
9. Total pension liability – ending	<u><u>\$ 36,224,617,253</u></u>
B. Plan fiduciary net position	
1. Contributions – employer	\$ 1,274,221,056
2. Contributions – employer (picked-up employee contributions)	309,509,309
3. Contributions – employee	251,744
4. Net investment income	826,902,875
5. Benefit payments, including refunds of employee contributions	(1,821,764,569)
6. Pension Plan Administrative Expense	(18,549,472)
7. Other	0
8. Net change in plan fiduciary net position	\$ 570,570,943
9. Plan fiduciary net position – beginning	21,854,814,032
10. Plan fiduciary net position – ending	<u><u>\$ 22,425,384,975</u></u>
C. Net pension liability	<u><u>\$ 13,799,232,278</u></u>
D. Plan fiduciary net position as a percentage of the total pension liability	61.91%
E. Covered-employee payroll	\$ 4,674,478,467
F. Net pension liability as a percentage of covered employee payroll	295.20%



Schedules of Required Supplementary Information Schedule of the Employers' Net Pension Liability

Last 10 Fiscal Years (which may be built prospectively)

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	\$ 22,220,097,547	\$ 14,203,015,303	\$ 8,017,082,244	63.92%	\$ 3,829,002,983	209.38%
2015	23,238,395,386	14,505,464,556	8,732,930,830	62.42%	3,995,447,345	218.57%
2016	27,439,233,629	14,069,978,917	13,369,254,712	51.28%	4,112,227,306	325.11%
2017	28,648,630,533	15,698,324,306	12,950,306,227	54.80%	4,243,521,876	305.18%
2018	29,917,401,383	16,598,407,973	13,318,993,410	55.48%	4,256,052,840	312.94%
2019	31,396,447,685	17,227,026,987	14,169,420,698	54.87%	4,376,216,753	323.78%
2020	32,691,755,844	17,385,480,476	15,306,275,368	53.18%	4,481,443,808	341.55%
2021	34,139,165,472	21,935,791,711	12,203,373,761	64.25%	4,667,346,006	261.46%
2022	34,822,778,620	21,854,814,032	12,967,964,588	62.76%	4,483,686,505	289.23%
2023	36,224,617,253	22,425,384,975	13,799,232,278	61.91%	4,674,478,467	295.20%



Schedules of Required Supplementary Information

Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

Last 10 Fiscal Years (which may be built prospectively)

Fiscal year ending June 30,	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total Pension Liability										
Service Cost	\$ 665,262,225	\$ 613,550,345	\$ 642,140,242	\$ 643,407,238	\$ 619,504,278	\$ 584,470,193	\$ 576,724,568	\$ 484,278,499	\$ 437,901,029	\$ 421,956,129
Interest on the Total Pension Liability	2,397,116,921	2,349,503,644	2,252,271,074	2,165,389,424	2,063,885,936	1,976,275,120	1,894,622,190	1,748,619,873	1,693,252,684	1,618,917,776
Benefit Changes	0	0	0	0	0	0	0	0	0	0
Difference between Expected and Actual Experience	161,224,056	(361,275,093)	228,048,119	54,544,851	221,473,495	124,753,379	61,179,390	297,534,219	(192,816,757)	66,400,876
Assumption Changes	0	(154,960,000)	0	0	60,320,037	0	0	2,915,922,677	261,213,541	0
Benefit Payments	(1,795,410,787)	(1,738,751,492)	(1,651,431,372)	(1,545,589,761)	(1,469,634,809)	(1,395,881,342)	(1,306,788,954)	(1,232,589,353)	(1,170,744,770)	(1,122,445,642)
Refunds	(26,353,782)	(24,454,256)	(23,618,435)	(22,443,593)	(16,502,635)	(20,846,500)	(16,340,290)	(12,927,672)	(10,507,888)	(8,475,969)
Net Change in Total Pension Liability	1,401,838,633	683,613,148	1,447,409,628	1,295,308,159	1,479,046,302	1,268,770,850	1,209,396,904	4,200,838,243	1,018,297,839	976,353,170
Total Pension Liability - Beginning	34,822,778,620	34,139,165,472	32,691,755,844	31,396,447,685	29,917,401,383	28,648,630,533	27,439,233,629	23,238,395,386	22,220,097,547	21,243,744,377
Total Pension Liability - Ending (a)	\$36,224,617,253	\$34,822,778,620	\$34,139,165,472	\$32,691,755,844	\$31,396,447,685	\$29,917,401,383	\$28,648,630,533	\$27,439,233,629	\$23,238,395,386	\$22,220,097,547
Plan Fiduciary Net Position										
Employer Contributions	\$ 1,274,221,056	\$ 1,242,139,095	\$ 1,281,558,696	\$ 1,098,589,013	\$ 922,635,334	\$ 847,595,466	\$ 781,244,218	\$ 756,558,222	\$ 717,792,981	\$ 653,127,697
Employer Contributions (picked-up employee contributions)	309,509,309	292,422,087	299,473,128	284,142,994	270,764,670	257,294,033	249,211,751	235,079,968	221,909,859	204,821,010
Employee Contributions	251,744	605,473	1,153,318	3,255,037	2,458,908	2,133,901	1,492,316	1,721,893	1,595,560	1,306,327
Pension Plan Net Investment Income	826,902,875	164,559,035	4,662,225,761	358,282,664	932,696,412	1,225,572,599	1,934,512,507	(169,368,110)	556,436,475	2,175,479,960
Benefit Payments	(1,795,410,787)	(1,738,751,492)	(1,651,431,372)	(1,545,589,761)	(1,469,634,809)	(1,395,881,342)	(1,306,788,954)	(1,232,589,353)	(1,170,744,770)	(1,122,445,642)
Refunds	(26,353,782)	(24,454,256)	(23,618,435)	(22,443,593)	(16,502,635)	(20,846,500)	(16,340,290)	(12,927,672)	(10,507,888)	(8,475,969)
Pension Plan Administrative Expense	(18,549,472)	(17,497,621)	(19,049,861)	(17,782,865)	(13,798,866)	(15,784,490)	(14,986,159)	(13,960,587)	(14,032,964)	(12,626,030)
Other	0	0	0	0	0	0	0	0	0	0
Net Change in Plan Fiduciary Net Position	570,570,943	(80,977,679)	4,550,311,235	158,453,489	628,619,014	900,083,667	1,628,345,389	(435,485,639)	302,449,253	1,891,187,353
Plan Fiduciary Net Position - Beginning	21,854,814,032	21,935,791,711	17,385,480,476	17,227,026,987	16,598,407,973	15,698,324,306	14,069,978,917	14,505,464,556	14,203,015,303	12,311,827,950
Plan Fiduciary Net Position - Ending (b)	\$22,425,384,975	\$21,854,814,032	\$21,935,791,711	\$17,385,480,476	\$17,227,026,987	\$16,598,407,973	\$15,698,324,306	\$14,069,978,917	\$14,505,464,556	\$14,203,015,303
Net Pension Liability - Ending (a) - (b)	13,799,232,278	12,967,964,588	12,203,373,761	15,306,275,368	14,169,420,698	13,318,993,410	12,950,306,227	13,369,254,712	8,732,930,830	8,017,082,244
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	61.91 %	62.76 %	64.25 %	53.18 %	54.87 %	55.48 %	54.80 %	51.28 %	62.42 %	63.92 %
Covered Employee Payroll	\$ 4,674,478,467	\$ 4,483,686,505	\$ 4,667,346,006	\$ 4,481,443,808	\$ 4,376,216,753	\$ 4,256,052,840	\$ 4,243,521,876	\$ 4,112,227,306	\$ 3,995,447,345	\$ 3,829,002,983
Net Pension Liability as a Percentage of Covered Employee Payroll	295.20 %	289.23 %	261.46 %	341.55 %	323.78 %	312.94 %	305.18 %	325.11 %	218.57 %	209.38 %

Notes to Schedule:

N/A



SECTION D

NOTES TO FINANCIAL STATEMENTS

Single Discount Rate

A single discount rate of 7.00% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.00%. 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 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 7.00%, 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:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

1% Decrease	Current Single Discount Rate Assumption	1% Increase
6.00%	7.00%	8.00%
\$18,551,927,406	\$13,799,232,278	\$9,863,182,556

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	54,973
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	35,897
Active Plan Members	64,243
Total Plan Members	155,113



SECTION E

CALCULATION OF THE SINGLE DISCOUNT RATE

Calculation of the Single Discount Rate

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 tax-exempt 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 7.00%; the municipal bond rate is 3.86% (based on the daily rate closest to but not later than the measurement date of the Fidelity “20-Year Municipal GO AA Index”); and the resulting single discount rate is 7.00%.

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 (SDR). It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.



Single Discount Rate Development

Projection of Contributions Beginning July 1, 2023

Year	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Employer Contributions for		Total Contributions	
				Current Employees	Employer Contributions for Future Employees		
1	4,610,630,339	\$ 194,646,315	\$ 4,805,276,654	\$ 309,373,296	\$ 1,193,853,382	\$ 40,423,894	\$ 1,543,650,572
2	4,437,925,563	\$ 508,626,224	4,946,551,788	304,885,486	1,149,006,225	105,616,180	1,559,507,891
3	4,297,882,452	\$ 794,097,958	5,091,980,410	300,851,772	1,112,377,081	164,825,784	1,578,054,637
4	4,171,293,722	\$ 1,070,390,912	5,241,684,634	297,413,242	1,079,162,855	222,058,511	1,598,634,608
5	4,051,756,959	\$ 1,344,033,204	5,395,790,162	293,752,380	1,047,869,413	278,705,087	1,620,326,880
6	3,936,389,602	\$ 1,618,036,792	5,554,426,393	290,111,914	1,017,767,642	335,414,698	1,643,294,254
7	3,823,521,740	\$ 1,894,204,789	5,717,726,529	286,381,778	988,366,142	392,555,035	1,667,302,955
8	3,711,599,073	\$ 2,174,228,617	5,885,827,689	282,081,530	959,010,813	450,338,958	1,691,431,301
9	3,596,950,378	\$ 2,461,920,645	6,058,871,023	277,324,874	929,387,641	509,927,414	1,716,639,929
10	3,478,138,375	\$ 2,758,863,456	6,237,001,831	271,642,607	898,688,745	571,431,948	1,741,763,300
11	3,359,997,654	\$ 3,060,372,031	6,420,369,685	265,775,814	868,163,296	633,882,168	1,767,821,278
12	3,243,407,350	\$ 3,365,721,204	6,609,128,554	259,472,588	838,038,446	697,127,876	1,794,638,910
13	3,124,015,611	\$ 3,679,421,323	6,803,436,933	253,045,264	807,189,757	762,103,281	1,822,338,302
14	3,003,669,827	\$ 3,999,788,152	7,003,457,979	245,700,192	776,094,559	828,459,534	1,850,254,285
15	2,882,354,827	\$ 4,327,004,817	7,209,359,644	238,082,509	744,748,932	896,234,565	1,879,066,006
16	2,760,981,756	\$ 4,660,333,062	7,421,314,817	230,265,878	713,388,302	965,275,462	1,908,929,642
17	2,640,280,390	\$ 4,999,221,083	7,639,501,473	222,047,581	682,201,228	1,035,467,933	1,939,716,742
18	2,520,232,853	\$ 5,343,869,963	7,864,102,816	213,463,723	651,183,091	1,106,853,626	1,971,500,440
19	2,398,248,707	\$ 5,697,058,732	8,095,307,439	204,570,615	619,664,570	1,180,008,151	2,004,243,336
20	2,273,858,738	\$ 6,059,450,740	8,333,309,478	195,097,080	587,524,427	1,255,068,905	2,037,690,412
21	2,148,516,079	\$ 6,429,792,698	8,578,308,776	185,202,086	555,138,126	1,331,776,299	2,072,116,511
22	2,020,928,353	\$ 6,809,582,701	8,830,511,054	175,012,395	522,171,739	1,410,440,628	2,107,624,762
23	1,891,189,849	\$ 7,198,938,231	9,090,128,079	164,344,398	488,649,630	1,491,086,224	2,144,080,252
24	1,760,388,259	\$ 7,596,989,586	9,357,377,845	153,329,817	454,852,839	1,573,532,951	2,181,715,607
25	1,629,989,873	\$ 8,002,494,880	9,632,484,754	142,298,116	421,160,229	1,657,523,581	2,220,981,926
26	1,499,124,531	\$ 8,416,555,275	9,915,679,805	131,173,396	387,346,965	1,743,286,193	2,261,806,554
27	1,367,976,046	\$ 8,839,224,746	10,207,200,792	119,971,499	353,460,542	1,830,831,968	2,304,264,009
28	1,236,897,638	\$ 9,270,394,857	10,507,292,495	108,599,613	319,592,226	1,920,138,445	2,348,330,284
29	1,106,456,903	\$ 9,709,749,991	10,816,206,894	97,257,562	285,888,673	2,011,140,252	2,394,286,487
30	978,275,726	\$ 10,155,927,651	11,134,203,377	86,088,264	252,768,950	2,103,555,181	2,442,412,395
31	856,040,341	\$ 10,605,508,616	11,461,548,956	75,417,154	221,185,513	2,196,675,022	2,493,277,689
32	741,461,571	\$ 11,057,056,925	11,798,518,496	65,322,764	191,580,408	2,290,202,351	2,547,105,523
33	635,384,568	\$ 11,510,010,372	12,145,394,939	56,040,919	164,172,008	2,384,020,720	2,604,233,647
34	539,327,694	\$ 11,963,141,856	12,502,469,551	47,568,703	139,352,630	2,477,875,965	2,664,797,298
35	453,566,214	\$ 12,416,475,941	12,870,042,155	40,049,897	117,193,397	2,571,773,175	2,729,016,469
36	376,540,316	\$ 12,871,881,079	13,248,421,395	33,248,510	97,291,283	2,666,099,352	2,796,639,145
37	308,962,640	\$ 13,328,962,344	13,637,924,984	27,281,401	79,830,420	2,760,772,699	2,867,884,520
38	250,617,010	\$ 13,788,262,968	14,038,879,978	22,129,482	64,754,953	2,855,905,733	2,942,790,168
39	201,570,122	\$ 14,250,052,927	14,451,623,050	17,798,642	52,082,114	2,951,554,372	3,021,435,128
40	160,447,518	\$ 14,716,053,250	14,876,500,767	14,183,561	41,456,769	3,048,075,087	3,103,715,417
41	127,006,372	\$ 15,186,863,517	15,313,869,890	11,227,363	32,816,175	3,145,592,065	3,189,635,603
42	99,510,170	\$ 15,664,587,495	15,764,097,665	8,796,699	25,711,648	3,244,541,052	3,279,049,399
43	77,042,788	\$ 16,150,519,348	16,227,562,136	6,818,287	19,906,478	3,345,190,102	3,371,914,867
44	59,032,975	\$ 16,645,619,488	16,704,652,463	5,224,418	15,253,065	3,447,738,140	3,468,215,623
45	44,928,760	\$ 17,150,840,485	17,195,769,245	3,976,195	11,608,788	3,552,382,471	3,567,967,454
46	33,380,501	\$ 17,667,944,360	17,701,324,861	2,957,512	8,624,924	3,659,488,052	3,671,070,488
47	24,330,678	\$ 18,197,413,134	18,221,743,812	2,155,698	6,286,612	3,769,154,724	3,777,597,034
48	17,111,998	\$ 18,740,351,082	18,757,463,080	1,516,123	4,421,434	3,881,611,209	3,887,548,766
49	11,676,271	\$ 19,297,256,223	19,308,932,495	1,035,685	3,016,940	3,996,960,662	4,001,013,287
50	7,512,973	\$ 19,869,102,137	19,876,615,110	666,401	1,941,218	4,115,404,735	4,118,012,354



Single Discount Rate Development

Projection of Contributions Beginning July 1, 2023

(Continued)

Year	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Employer Contributions		Total Contributions
				Contributions from Current Employees	Contributions for Current Employees	
51	4,374,304	\$ 20,456,613,291	20,460,987,594	388,438	1,130,242	4,238,612,164
52	2,379,600	\$ 21,060,161,029	21,062,540,629	211,308	614,846	4,362,929,978
53	1,124,043	\$ 21,680,655,280	21,681,779,324	99,927	290,433	4,491,014,586
54	522,443	\$ 22,318,701,193	22,319,223,636	46,445	134,990	4,622,961,465
55	239,528	\$ 22,975,169,283	22,975,408,811	21,318	61,890	4,758,834,751
56	71,940	\$ 23,650,813,890	23,650,885,830	6,403	18,588	4,898,720,000
57	7,898	\$ 24,346,213,975	24,346,221,873	703	2,041	5,042,733,089
58	-	\$ 25,062,000,796	25,062,000,796	-	-	5,190,988,301
59	-	\$ 25,798,823,620	25,798,823,620	-	-	5,343,603,357
60	-	\$ 26,557,309,034	26,557,309,034	-	-	5,500,705,296
61	-	\$ 27,338,093,920	27,338,093,920	-	-	5,662,426,031
62	-	\$ 28,141,833,881	28,141,833,881	-	-	5,828,901,357
63	-	\$ 28,969,203,797	28,969,203,797	-	-	6,000,271,057
64	-	\$ 29,820,898,389	29,820,898,389	-	-	6,176,679,026
65	-	\$ 30,697,632,801	30,697,632,801	-	-	6,358,273,389
66	-	\$ 31,600,143,206	31,600,143,206	-	-	6,545,206,627
67	-	\$ 32,529,187,416	32,529,187,416	-	-	6,737,635,701
68	-	\$ 33,485,545,526	33,485,545,526	-	-	6,935,722,191
69	-	\$ 34,470,020,565	34,470,020,565	-	-	7,139,632,423
70	-	\$ 35,483,439,169	35,483,439,169	-	-	7,349,537,617
71	-	\$ 36,526,652,281	36,526,652,281	-	-	7,565,614,023
72	-	\$ 37,600,535,858	37,600,535,858	-	-	7,788,043,075
73	-	\$ 38,705,991,612	38,705,991,612	-	-	8,017,011,541
74	-	\$ 39,843,947,765	39,843,947,765	-	-	8,252,711,681
75	-	\$ 41,015,359,830	41,015,359,830	-	-	8,495,341,404
76	-	\$ 42,221,211,409	42,221,211,409	-	-	8,745,104,441
77	-	\$ 43,462,515,024	43,462,515,024	-	-	9,002,210,512
78	-	\$ 44,740,312,966	44,740,312,966	-	-	9,266,875,501
79	-	\$ 46,055,678,167	46,055,678,167	-	-	9,539,321,641
80	-	\$ 47,409,715,105	47,409,715,105	-	-	9,819,777,697
81	-	\$ 48,803,560,729	48,803,560,729	-	-	10,108,479,161
82	-	\$ 50,238,385,415	50,238,385,415	-	-	10,405,668,449
83	-	\$ 51,715,393,946	51,715,393,946	-	-	10,711,595,101
84	-	\$ 53,235,826,528	53,235,826,528	-	-	11,026,515,997
85	-	\$ 54,800,959,828	54,800,959,828	-	-	11,350,695,567
86	-	\$ 56,412,108,047	56,412,108,047	-	-	11,684,406,017
87	-	\$ 58,070,624,023	58,070,624,023	-	-	12,027,927,554
88	-	\$ 59,777,900,370	59,777,900,370	-	-	12,381,548,624
89	-	\$ 61,535,370,640	61,535,370,640	-	-	12,745,566,153
90	-	\$ 63,344,510,537	63,344,510,537	-	-	13,120,285,798
91	-	\$ 65,206,839,147	65,206,839,147	-	-	13,506,022,201
92	-	\$ 67,123,920,218	67,123,920,218	-	-	13,903,099,254
93	-	\$ 69,097,363,472	69,097,363,472	-	-	14,311,850,372
94	-	\$ 71,128,825,959	71,128,825,959	-	-	14,732,618,772
95	-	\$ 73,220,013,442	73,220,013,442	-	-	15,165,757,764
96	-	\$ 75,372,681,837	75,372,681,837	-	-	15,611,631,043
97	-	\$ 77,588,638,683	77,588,638,683	-	-	16,070,612,995
98	-	\$ 79,869,744,660	79,869,744,660	-	-	16,543,089,017
99	-	\$ 82,217,915,153	82,217,915,153	-	-	17,029,455,835
100	-	\$ 84,635,121,859	84,635,121,859	-	-	17,564,048,625



Single Discount Rate Development

Projection of Plan Fiduciary Net Position Beginning July 1, 2023

Year	Projected Beginning		Projected Total		Projected Benefit		Projected		Projected Investment		Projected Ending Plan	
	Plan Net Position	Contributions	Payments	Administrative Expenses	Earnings at 7.00%	Net Position						
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)						
1	\$ 22,425,384,975	\$ 1,543,650,572	\$ 1,924,728,041	\$ 19,094,826	\$ 1,556,007,803	\$ 23,581,220,482						
2	23,581,220,482	1,559,507,891	\$ 2,026,897,941	17,934,342	1,633,986,371	\$ 24,729,882,461						
3	24,729,882,461	1,578,054,637	\$ 2,124,120,571	17,062,821	1,711,715,614	\$ 25,878,469,319						
4	25,878,469,319	1,598,634,608	\$ 2,221,010,663	16,326,130	1,789,516,360	\$ 27,029,283,494						
5	27,029,283,494	1,620,326,880	\$ 2,317,890,889	15,661,575	1,867,509,148	\$ 28,183,567,057						
6	28,183,567,057	1,643,294,254	\$ 2,414,458,722	15,047,755	1,945,797,670	\$ 29,343,152,504						
7	29,343,152,504	1,667,302,955	\$ 2,511,605,908	14,478,750	2,024,471,677	\$ 30,508,842,479						
8	30,508,842,479	1,691,431,301	\$ 2,609,418,994	13,930,687	2,103,553,486	\$ 31,680,477,584						
9	31,680,477,584	1,716,639,929	\$ 2,707,773,943	13,401,472	2,183,069,330	\$ 32,859,011,428						
10	32,859,011,428	1,741,763,300	\$ 2,807,301,536	12,875,810	2,263,024,683	\$ 34,043,622,066						
11	34,043,622,066	1,767,821,278	\$ 2,906,548,485	12,351,691	2,343,447,172	\$ 35,235,990,340						
12	35,235,990,340	1,794,638,910	\$ 3,003,990,256	11,855,834	2,424,499,974	\$ 36,439,283,134						
13	36,439,283,134	1,822,338,302	\$ 3,101,266,586	11,368,695	2,506,353,225	\$ 37,655,339,381						
14	37,655,339,381	1,850,254,285	\$ 3,197,105,907	10,883,785	2,589,156,738	\$ 38,886,760,713						
15	38,886,760,713	1,879,066,006	\$ 3,290,531,324	10,406,414	2,673,149,426	\$ 40,138,038,406						
16	40,138,038,406	1,908,929,642	\$ 3,380,865,433	9,931,573	2,758,674,532	\$ 41,414,845,575						
17	41,414,845,575	1,939,716,742	\$ 3,467,476,189	9,462,728	2,846,146,383	\$ 42,723,769,784						
18	42,723,769,784	1,971,500,440	\$ 3,549,260,474	9,000,554	2,936,066,558	\$ 44,073,075,753						
19	44,073,075,753	2,004,243,336	\$ 3,627,779,393	8,547,107	3,028,958,515	\$ 45,469,951,104						
20	45,469,951,104	2,037,690,412	\$ 3,702,606,378	8,090,180	3,125,331,709	\$ 46,922,276,668						
21	46,922,276,668	2,072,116,511	\$ 3,772,553,242	7,631,187	3,225,788,092	\$ 48,439,996,841						
22	48,439,996,841	2,107,624,762	\$ 3,838,169,722	7,177,845	3,331,008,137	\$ 50,033,282,174						
23	50,033,282,174	2,144,080,252	\$ 3,899,643,652	6,721,173	3,441,692,988	\$ 51,712,690,589						
24	51,712,690,589	2,181,715,607	\$ 3,955,442,174	6,265,468	3,558,642,298	\$ 53,491,340,853						
25	53,491,340,853	2,220,981,926	\$ 4,005,022,294	5,815,647	3,682,808,416	\$ 55,384,293,254						
26	55,384,293,254	2,261,806,554	\$ 4,048,389,946	5,369,246	3,815,242,944	\$ 57,407,583,560						
27	57,407,583,560	2,304,264,009	\$ 4,086,114,080	4,923,000	3,957,051,484	\$ 59,577,861,974						
28	59,577,861,974	2,348,330,284	\$ 4,117,748,670	4,479,824	4,109,413,972	\$ 61,913,377,735						
29	61,913,377,735	2,394,286,487	\$ 4,143,274,263	4,040,746	4,273,618,160	\$ 64,433,967,373						
30	64,433,967,373	2,442,412,395	\$ 4,161,796,138	3,602,288	4,451,093,138	\$ 67,162,074,481						
31	67,162,074,481	2,493,277,689	\$ 4,171,190,913	3,175,325	4,643,502,246	\$ 70,124,488,178						
32	70,124,488,178	2,547,105,523	\$ 4,170,807,978	2,775,932	4,852,750,234	\$ 73,350,760,026						
33	73,350,760,026	2,604,233,647	\$ 4,159,486,576	2,403,883	5,080,957,279	\$ 76,874,060,492						
34	76,874,060,492	2,664,797,298	\$ 4,136,223,737	2,060,254	5,330,484,440	\$ 80,731,058,238						
35	80,731,058,238	2,729,016,469	\$ 4,101,094,377	1,747,382	5,603,903,437	\$ 84,961,136,385						
36	84,961,136,385	2,796,639,145	\$ 4,055,000,491	1,466,795	5,903,931,326	\$ 89,605,239,570						
37	89,605,239,570	2,867,884,520	\$ 3,997,827,974	1,212,993	6,233,445,890	\$ 94,707,529,013						
38	94,707,529,013	2,942,790,168	\$ 3,929,686,073	992,731	6,595,535,716	\$ 100,315,176,093						
39	100,315,176,093	3,021,435,128	\$ 3,850,685,187	801,926	6,993,501,862	\$ 106,478,625,969						
40	106,478,625,969	3,103,715,417	\$ 3,762,076,830	642,023	7,430,828,799	\$ 113,250,451,332						
41	113,250,451,332	3,189,635,603	\$ 3,664,029,114	509,089	7,911,191,124	\$ 120,686,739,857						
42	120,686,739,857	3,279,049,399	\$ 3,558,214,537	401,363	8,438,452,454	\$ 128,845,625,810						
43	128,845,625,810	3,371,914,867	\$ 3,445,401,550	313,200	9,016,654,497	\$ 137,788,480,424						
44	137,788,480,424	3,468,215,623	\$ 3,326,345,465	240,701	9,650,066,822	\$ 147,580,176,705						
45	147,580,176,705	3,567,967,454	\$ 3,201,889,193	183,911	10,343,202,078	\$ 158,289,273,132						
46	158,289,273,132	3,671,070,488	\$ 3,073,299,025	138,825	11,100,812,489	\$ 169,987,718,260						
47	169,987,718,260	3,777,597,034	\$ 2,941,060,847	101,765	11,927,920,350	\$ 182,752,073,032						
48	182,752,073,032	3,887,548,766	\$ 2,806,000,297	73,345	12,829,856,555	\$ 196,663,404,711						
49	196,663,404,711	4,001,013,287	\$ 2,668,576,999	51,286	13,812,283,091	\$ 211,808,072,804						
50	211,808,072,804	4,118,012,354	\$ 2,529,633,366	34,190	14,881,216,933	\$ 228,277,634,534						



Single Discount Rate Development

Projection of Plan Fiduciary Net Position Beginning July 1, 2023 (Continued)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
51	228,277,634,534	4,238,612,164	\$ 2,389,685,343	21,401	16,043,051,635	\$ 246,169,591,589
52	246,169,591,589	4,362,929,978	\$ 2,249,212,495	12,050	17,304,599,879	\$ 265,587,896,902
53	265,587,896,902	4,491,014,586	\$ 2,109,024,799	6,388	18,673,112,171	\$ 286,642,992,473
54	286,642,992,473	4,622,961,465	\$ 1,969,702,412	2,663	20,156,302,834	\$ 309,452,551,697
55	309,452,551,697	4,758,834,751	\$ 1,832,090,977	1,300	21,762,382,100	\$ 334,141,676,271
56	334,141,676,271	4,898,720,000	\$ 1,696,944,174	524	23,500,084,162	\$ 360,843,535,734
57	360,843,535,734	5,042,733,089	\$ 1,564,830,183	59	25,378,715,333	\$ 389,700,153,915
58	389,700,153,915	5,190,988,301	\$ 1,436,353,943	-	27,408,200,396	\$ 420,862,988,668
59	420,862,988,668	5,343,603,357	\$ 1,312,085,739	-	29,599,125,839	\$ 454,493,632,126
60	454,493,632,126	5,500,705,296	\$ 1,192,517,777	-	31,962,790,551	\$ 490,764,610,197
61	490,764,610,197	5,662,426,031	\$ 1,078,089,946	-	34,511,260,748	\$ 529,860,207,030
62	529,860,207,030	5,828,901,357	\$ 969,182,154	-	37,257,427,921	\$ 571,977,354,154
63	571,977,354,154	6,000,271,057	\$ 866,113,418	-	40,215,071,109	\$ 617,326,582,902
64	617,326,582,902	6,176,679,026	\$ 769,143,573	-	43,398,923,517	\$ 666,133,041,872
65	666,133,041,872	6,358,273,389	\$ 678,473,825	-	46,824,743,720	\$ 718,637,585,156
66	718,637,585,156	6,545,206,627	\$ 594,241,909	-	50,509,392,013	\$ 775,097,941,887
67	775,097,941,887	6,737,635,701	\$ 516,524,286	-	54,470,912,203	\$ 835,789,965,505
68	835,789,965,505	6,935,722,191	\$ 445,346,128	-	58,728,618,726	\$ 901,008,960,294
69	901,008,960,294	7,139,632,423	\$ 380,683,543	-	63,303,189,426	\$ 971,071,098,600
70	971,071,098,600	7,349,537,617	\$ 322,462,238	-	68,216,764,816	\$ 1,046,314,938,794
71	1,046,314,938,794	7,565,614,023	\$ 270,555,744	-	73,493,054,397	\$ 1,127,103,051,470
72	1,127,103,051,470	7,788,043,075	\$ 224,782,877	-	79,157,450,587	\$ 1,213,823,762,255
73	1,213,823,762,255	8,017,011,541	\$ 184,896,506	-	85,237,151,111	\$ 1,306,893,028,401
74	1,306,893,028,401	8,252,711,681	\$ 150,572,057	-	91,761,290,759	\$ 1,406,756,458,784
75	1,406,756,458,784	8,495,341,404	\$ 121,405,442	-	98,761,082,866	\$ 1,513,891,477,611
76	1,513,891,477,611	8,745,104,441	\$ 96,927,706	-	106,269,970,272	\$ 1,628,809,624,618
77	1,628,809,624,618	9,002,210,512	\$ 76,626,169	-	114,323,785,616	\$ 1,752,058,994,577
78	1,752,058,994,577	9,266,875,501	\$ 59,976,915	-	122,960,920,985	\$ 1,884,226,814,149
79	1,884,226,814,149	9,539,321,641	\$ 46,470,262	-	132,222,507,431	\$ 2,025,942,172,959
80	2,025,942,172,959	9,819,777,697	\$ 35,632,088	-	142,152,605,413	\$ 2,177,878,923,980
81	2,177,878,923,980	10,108,479,161	\$ 27,031,576	-	152,798,407,563	\$ 2,340,758,779,129
82	2,340,758,779,129	10,405,668,449	\$ 20,287,545	-	164,210,455,175	\$ 2,515,354,615,207
83	2,515,354,615,207	10,711,595,101	\$ 15,067,081	-	176,442,869,664	\$ 2,702,494,012,891
84	2,702,494,012,891	11,026,515,997	\$ 11,078,814	-	189,553,600,542	\$ 2,903,063,050,615
85	2,903,063,050,615	11,350,695,567	\$ 8,072,178	-	203,604,691,020	\$ 3,118,010,365,024
86	3,118,010,365,024	11,684,406,017	\$ 5,834,684	-	218,662,562,340	\$ 3,348,351,498,696
87	3,348,351,498,696	12,027,927,554	\$ 4,189,009	-	234,798,318,225	\$ 3,595,173,555,466
88	3,595,173,555,466	12,381,548,624	\$ 2,990,861	-	252,088,070,834	\$ 3,859,640,184,063
89	3,859,640,184,063	12,745,566,153	\$ 2,128,094	-	270,613,289,653	\$ 4,142,996,911,775
90	4,142,996,911,775	13,120,285,798	\$ 1,511,718	-	290,461,175,171	\$ 4,446,576,861,026
91	4,446,576,861,026	13,506,022,201	\$ 1,072,986	-	311,725,059,149	\$ 4,771,806,869,389
92	4,771,806,869,389	13,903,099,254	\$ 762,451	-	334,504,833,064	\$ 5,120,214,039,255
93	5,120,214,039,255	14,311,850,372	\$ 543,649	-	358,907,406,809	\$ 5,493,432,752,788
94	5,493,432,752,788	14,732,618,772	\$ 389,249	-	385,047,199,886	\$ 5,893,212,182,197
95	5,893,212,182,197	15,165,757,764	\$ 281,276	-	413,046,667,125	\$ 6,321,424,325,810
96	6,321,424,325,810	15,611,631,043	\$ 204,268	-	443,036,861,455	\$ 6,780,072,614,040
97	6,780,072,614,040	16,070,612,995	\$ 149,678	-	475,158,036,180	\$ 7,271,301,113,537
98	7,271,301,113,537	16,543,089,017	\$ 110,702	-	509,560,289,461	\$ 7,797,404,381,313
99	7,797,404,381,313	17,029,455,835	\$ 82,974	-	546,404,254,090	\$ 8,360,838,008,264
100	8,360,838,008,264	17,564,048,625	\$ 62,386	-	585,863,002,977	\$ 8,964,264,997,480



Single Discount Rate Development

Present Values of Projected Benefit Payments Beginning July 1, 2023

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 (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}
1	\$ 22,425,384,975	\$ 1,924,728,041	\$ 1,924,728,041	\$ -	\$ 1,860,704,828	\$ -	\$ 1,860,704,828
2	23,581,220,482	2,026,897,941	2,026,897,941	-	1,831,286,168	-	1,831,286,168
3	24,729,882,461	2,124,120,571	2,124,120,571	-	1,793,575,739	-	1,793,575,739
4	25,878,469,319	2,221,010,663	2,221,010,663	-	1,752,699,334	-	1,752,699,334
5	27,029,283,494	2,317,890,889	2,317,890,889	-	1,709,487,734	-	1,709,487,734
6	28,183,567,057	2,414,458,722	2,414,458,722	-	1,664,213,374	-	1,664,213,374
7	29,343,152,504	2,511,605,908	2,511,605,908	-	1,617,919,618	-	1,617,919,618
8	30,508,842,479	2,609,418,994	2,609,418,994	-	1,570,961,301	-	1,570,961,301
9	31,680,477,584	2,707,773,943	2,707,773,943	-	1,523,527,488	-	1,523,527,488
10	32,859,011,428	2,807,301,536	2,807,301,536	-	1,476,193,114	-	1,476,193,114
11	34,043,622,066	2,906,548,485	2,906,548,485	-	1,428,393,635	-	1,428,393,635
12	35,235,990,340	3,003,990,256	3,003,990,256	-	1,379,701,309	-	1,379,701,309
13	36,439,283,134	3,101,266,586	3,101,266,586	-	1,331,195,617	-	1,331,195,617
14	37,655,339,381	3,197,105,907	3,197,105,907	-	1,282,555,077	-	1,282,555,077
15	38,886,760,713	3,290,531,324	3,290,531,324	-	1,233,676,389	-	1,233,676,389
16	40,138,038,406	3,380,865,433	3,380,865,433	-	1,184,620,737	-	1,184,620,737
17	41,414,845,575	3,467,476,189	3,467,476,189	-	1,135,484,357	-	1,135,484,357
18	42,723,769,784	3,549,260,474	3,549,260,474	-	1,086,229,925	-	1,086,229,925
19	44,073,075,753	3,627,779,393	3,627,779,393	-	1,037,626,327	-	1,037,626,327
20	45,469,951,104	3,702,606,378	3,702,606,378	-	989,746,284	-	989,746,284
21	46,922,276,668	3,772,553,242	3,772,553,242	-	942,470,868	-	942,470,868
22	48,439,996,841	3,838,169,722	3,838,169,722	-	896,134,000	-	896,134,000
23	50,033,282,174	3,899,643,652	3,899,643,652	-	850,922,339	-	850,922,339
24	51,712,690,589	3,955,442,174	3,955,442,174	-	806,633,518	-	806,633,518
25	53,491,340,853	4,005,022,294	4,005,022,294	-	763,312,518	-	763,312,518
26	55,384,293,254	4,048,389,946	4,048,389,946	-	721,100,849	-	721,100,849
27	57,407,583,560	4,086,114,080	4,086,114,080	-	680,205,875	-	680,205,875
28	59,577,861,974	4,117,748,670	4,117,748,670	-	640,628,048	-	640,628,048
29	61,913,377,735	4,143,274,263	4,143,274,263	-	602,429,206	-	602,429,206
30	64,433,967,373	4,161,796,138	4,161,796,138	-	565,534,835	-	565,534,835
31	67,162,074,481	4,171,190,913	4,171,190,913	-	529,730,341	-	529,730,341
32	70,124,488,178	4,170,807,978	4,170,807,978	-	495,029,635	-	495,029,635
33	73,350,760,026	4,159,486,576	4,159,486,576	-	461,388,698	-	461,388,698
34	76,874,060,492	4,136,223,737	4,136,223,737	-	428,792,786	-	428,792,786
35	80,731,058,238	4,101,094,377	4,101,094,377	-	397,337,389	-	397,337,389
36	84,961,136,385	4,055,000,491	4,055,000,491	-	367,169,673	-	367,169,673
37	89,605,239,570	3,997,827,974	3,997,827,974	-	338,311,076	-	338,311,076
38	94,707,529,013	3,929,686,073	3,929,686,073	-	310,789,397	-	310,789,397
39	100,315,176,093	3,850,685,187	3,850,685,187	-	284,618,138	-	284,618,138
40	106,478,625,969	3,762,076,830	3,762,076,830	-	259,877,357	-	259,877,357
41	113,250,451,332	3,664,029,114	3,664,029,114	-	236,546,169	-	236,546,169
42	120,686,739,857	3,558,214,537	3,558,214,537	-	214,686,806	-	214,686,806
43	128,845,625,810	3,445,401,550	3,445,401,550	-	194,280,536	-	194,280,536
44	137,788,480,424	3,326,345,465	3,326,345,465	-	175,296,410	-	175,296,410
45	147,580,176,705	3,201,889,193	3,201,889,193	-	157,698,728	-	157,698,728
46	158,289,273,132	3,073,299,025	3,073,299,025	-	141,463,023	-	141,463,023
47	169,987,718,260	2,941,060,847	2,941,060,847	-	126,519,756	-	126,519,756
48	182,752,073,032	2,806,000,297	2,806,000,297	-	112,812,772	-	112,812,772
49	196,663,404,711	2,668,576,999	2,668,576,999	-	100,268,962	-	100,268,962
50	211,808,072,804	2,529,633,366	2,529,633,366	-	88,830,189	-	88,830,189



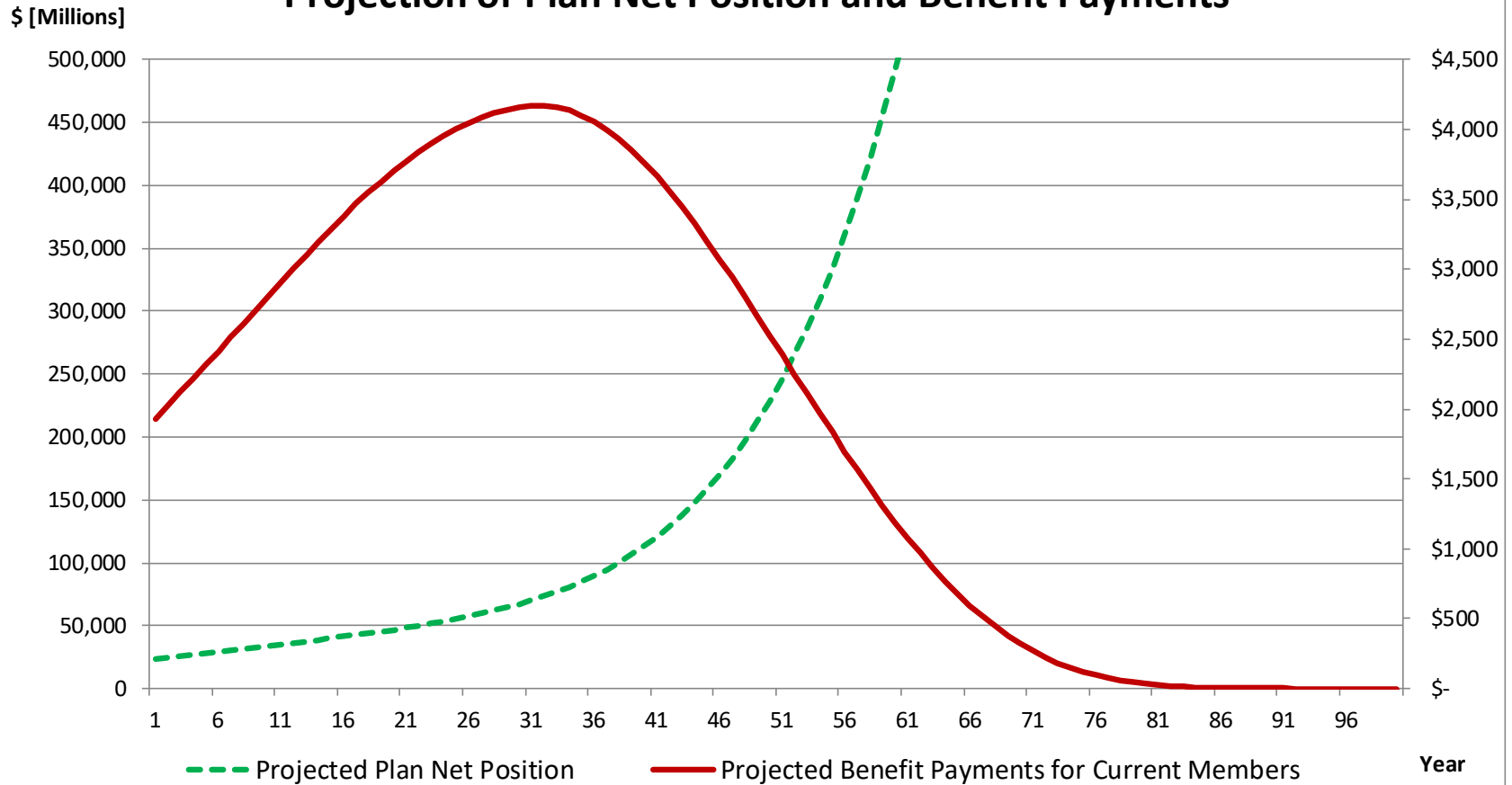
Single Discount Rate Development

PVs of Projected Benefit Payments Beginning July 1, 2023 (continued)

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 (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}))
51	\$ 228,277,634,534	\$ 2,389,685,343	\$ 2,389,685,343	\$ -	\$ 78,425,979	\$ -	\$ 78,425,979
52	246,169,591,589	2,249,212,495	2,249,212,495	-	68,986,790	-	68,986,790
53	265,587,896,902	2,109,024,799	2,109,024,799	-	60,455,158	-	60,455,158
54	286,642,992,473	1,969,702,412	1,969,702,412	-	52,767,742	-	52,767,742
55	309,452,551,697	1,832,090,977	1,832,090,977	-	45,870,255	-	45,870,255
56	334,141,676,271	1,696,944,174	1,696,944,174	-	39,707,075	-	39,707,075
57	360,843,535,734	1,564,830,183	1,564,830,183	-	34,220,297	-	34,220,297
58	389,700,153,915	1,436,353,943	1,436,353,943	-	29,355,823	-	29,355,823
59	420,862,988,668	1,312,085,739	1,312,085,739	-	25,061,740	-	25,061,740
60	454,493,632,126	1,192,517,777	1,192,517,777	-	21,287,766	-	21,287,766
61	490,764,610,197	1,078,089,946	1,078,089,946	-	17,986,077	-	17,986,077
62	529,860,207,030	969,182,154	969,182,154	-	15,111,344	-	15,111,344
63	571,977,354,154	866,113,418	866,113,418	-	12,620,852	-	12,620,852
64	617,326,582,902	769,143,573	769,143,573	-	10,474,602	-	10,474,602
65	666,133,041,872	678,473,825	678,473,825	-	8,635,340	-	8,635,340
66	718,637,585,156	594,241,909	594,241,909	-	7,068,477	-	7,068,477
67	775,097,941,887	516,524,286	516,524,286	-	5,742,084	-	5,742,084
68	835,789,965,505	445,346,128	445,346,128	-	4,626,927	-	4,626,927
69	901,008,960,294	380,683,543	380,683,543	-	3,696,369	-	3,696,369
70	971,071,098,600	322,462,238	322,462,238	-	2,926,216	-	2,926,216
71	1,046,314,938,794	270,555,744	270,555,744	-	2,294,565	-	2,294,565
72	1,127,103,051,470	224,782,877	224,782,877	-	1,781,653	-	1,781,653
73	1,213,823,762,255	184,896,506	184,896,506	-	1,369,635	-	1,369,635
74	1,306,893,028,401	150,572,057	150,572,057	-	1,042,406	-	1,042,406
75	1,406,756,458,784	121,405,442	121,405,442	-	785,501	-	785,501
76	1,513,891,477,611	96,927,706	96,927,706	-	586,101	-	586,101
77	1,628,809,624,618	76,626,169	76,626,169	-	433,030	-	433,030
78	1,752,058,994,577	59,976,915	59,976,915	-	316,768	-	316,768
79	1,884,226,814,149	46,470,262	46,470,262	-	229,376	-	229,376
80	2,025,942,172,959	35,632,088	35,632,088	-	164,373	-	164,373
81	2,177,878,923,980	27,031,576	27,031,576	-	116,541	-	116,541
82	2,340,758,779,129	20,287,545	20,287,545	-	81,743	-	81,743
83	2,515,354,615,207	15,067,081	15,067,081	-	56,737	-	56,737
84	2,702,494,012,891	11,078,814	11,078,814	-	38,990	-	38,990
85	2,903,063,050,615	8,072,178	8,072,178	-	26,550	-	26,550
86	3,118,010,365,024	5,834,684	5,834,684	-	17,935	-	17,935
87	3,348,351,498,696	4,189,009	4,189,009	-	12,034	-	12,034
88	3,595,173,555,466	2,990,861	2,990,861	-	8,030	-	8,030
89	3,859,640,184,063	2,128,094	2,128,094	-	5,340	-	5,340
90	4,142,996,911,775	1,511,718	1,511,718	-	3,545	-	3,545
91	4,446,576,861,026	1,072,986	1,072,986	-	2,352	-	2,352
92	4,771,806,869,389	762,451	762,451	-	1,562	-	1,562
93	5,120,214,039,255	543,649	543,649	-	1,041	-	1,041
94	5,493,432,752,788	389,249	389,249	-	696	-	696
95	5,893,212,182,197	281,276	281,276	-	470	-	470
96	6,321,424,325,810	204,268	204,268	-	319	-	319
97	6,780,072,614,040	149,678	149,678	-	219	-	219
98	7,271,301,113,537	110,702	110,702	-	151	-	151
99	7,797,404,381,313	82,974	82,974	-	106	-	106
100	8,360,838,008,264	62,386	62,386	-	74	-	74
Totals					\$ 42,335,023,009	\$ -	\$ 42,335,023,009



Projection of Plan Net Position and Benefit Payments



SECTION F

GASB No. 68 INFORMATION

GASB No. 68 Disclosure Information

This section of the report shows the GASB No. 68 information for the employers covered by ERS. Pages F-1, F-2 and F-3 show the aggregate pension expense and Deferred Outflows and (Inflows) of resources for the employers with employees covered by ERS. Pages F-4 through F-6 show the disclosure information for the individual employers that need to be incorporated into the employers' financial statements.

Page F-4 shows the employers their proportionate share of the Net Pension Liability and Pension Expense. Page F-5 shows the employers their deferred inflows and outflows by component. Page F-6 shows the employers the deferred outflows and inflows of resources to be recognized in future years' pension expense.

Pension Expense

The table below shows the aggregate Pension Expense for the ERS employers for the fiscal year ending June 30, 2023. Pension Expense for each employer is determined on a proportionate share basis and is shown on page F-4.

A. Expense

1. Service Cost	\$ 665,262,225
2. Interest on the Total Pension Liability	2,397,116,921
3. Current-Period Benefit Changes	0
4. Employee Contributions (made negative for addition here)	(309,761,053)
5. Projected Earnings on Plan Investments (made negative for addition here)	(1,520,865,365)
6. Pension Plan Administrative Expense	18,549,472
7. Other Changes in Plan Fiduciary Net Position	0
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	49,317,649
9. Recognition of Outflow (Inflow) of Resources due to Assets	(66,735,882)
10. Total Pension Expense	\$ 1,232,883,967

Recognition of Deferred Outflows and Inflows of Resources

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 2023 fiscal year, the expected remaining service lives of all employees was 772,857.06 years. Additionally, the plan membership (active employees and inactive employees) was 149,481. 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 2023 fiscal year is 5.1703 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.

The current year's Deferred Outflows and (Inflows) are shown below. The aggregate Deferred Outflows and (Inflows) for the current and prior reporting periods is shown on the following page. The amounts by employer are shown on pages F-5 and F-6.

Statement of Outflows and Inflows Arising from Current Reporting Period for Fiscal Year Ending June 30, 2023

A. Outflows (Inflows) of Resources due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ 161,224,056
2. Assumption Changes (gains) or losses	\$ 0
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	5.1703
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	\$ 31,182,728
5. Outflow (Inflow) of Resources to be recognized in the current pension expense for Assumption Changes	\$ 0
6. Outflow (Inflow) of Resources to be recognized in the current pension expense due to Liabilities	\$ 31,182,728
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	\$ 130,041,328
8. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for Assumption Changes	\$ 0
9. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Liabilities	\$ 130,041,328

B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ 693,962,490
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	\$ 138,792,499
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ 555,169,991



Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods for Fiscal Year Ending June 30, 2023

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	\$ 161,840,735	\$ 112,523,086	\$ 49,317,649
2. due to Assets	\$ 623,095,946	\$ 689,831,828	\$ (66,735,882)
3. Total	\$ 784,936,681	\$ 802,354,914	\$ (17,418,233)

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	\$ 146,426,325	\$ 77,863,000	\$ 68,563,325
2. Assumption Changes	15,414,410	34,660,086	(19,245,676)
3. Net Difference between projected and actual earnings on pension plan investments	623,095,946	689,831,828	(66,735,882)
4. Total	\$ 784,936,681	\$ 802,354,914	\$ (17,418,233)

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	\$ 269,108,972	\$ 232,662,682	\$ 36,446,290
2. Assumption Changes	13,870,994	104,076,274	(90,205,280)
3. Net Difference between projected and actual earnings on pension plan investments	1,540,704,589	1,379,663,652	161,040,937
4. Total	\$ 1,823,684,555	\$ 1,716,402,608	\$ 107,281,947

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
2024	\$ (106,523,637)
2025	\$ (302,249,734)
2026	\$ 347,334,228
2027	\$ 163,410,674
2028	\$ 5,310,416
Thereafter	0
Total	\$ 107,281,947



Recognition of Deferred Outflows and Inflows of Resources for Fiscal Year Ending June 30, 2023

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					
2018	124,753,379	5.3882	8,988,014	0	0.0000
2019	221,473,495	5.3135	41,681,283	13,067,080	0.3135
2020	71,837,371	5.2047	13,802,405	16,627,751	1.2047
2021	228,048,119	5.1542	44,245,105	95,312,804	2.1542
2022	(361,275,093)	5.0644	(71,336,210)	(218,602,673)	3.0644
2023	161,224,056	5.1703	31,182,728	130,041,328	4.1703
Total			68,563,325	36,446,290	
Deferred Outflow (Inflow) due to Assumption Changes					
2018	0	5.3882	0	0	0.0000
2019	60,320,037	5.3135	11,352,223	3,558,922	0.3135
2020	0	5.2047	0	0	1.2047
2021	0	5.1542	0	0	2.1542
2022	(154,960,000)	5.0644	(30,597,899)	(93,764,202)	3.0644
2023	0	5.1703	0	0	4.1703
Total			(19,245,676)	(90,205,280)	
Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments					
2018	(138,082,010)	5.0000	0	0	0.0000
2019	218,549,437	5.0000	43,709,885	0	0.0000
2020	840,615,204	5.0000	168,123,041	168,123,040	1.0000
2021	(3,449,159,136)	5.0000	(689,831,828)	(1,379,663,652)	2.0000
2022	1,362,352,600	5.0000	272,470,521	817,411,558	3.0000
2023	693,962,490	5.0000	138,792,499	555,169,991	4.0000
Total			(66,735,882)	161,040,937	

**Schedule of Employer Allocations
and Pension Amounts
At June 30, 2023
Exhibit 1**

Employer (1)	Proportionate Share as of June 30, 2023 (2)	Change in Proportionate Share (3)	Proportionate Share of Net Pension Liability as of June 30, 2023 7.00% (4)	Sensitivity Analysis		Proportionate Share of Pension Expense as of June 30, 2023 (7)
				Proportionate Share of Net Pension Liability 1% Decrease 6.00% (5)	Proportionate Share of Net Pension Liability 1% Increase 8.00% (6)	
State of Hawaii	57.28656832%	-0.07042801%	7,905,106,627	10,524,044,225	5,736,175,457	712,746,730
City and County of Honolulu	18.31231806%	-0.15353834%	2,526,959,305	3,485,882,681	1,732,805,674	248,181,753
County of Hawaii	4.59046643%	0.08537016%	633,449,126	871,836,867	436,023,039	57,564,617
County of Maui	4.75267663%	0.33910852%	655,832,887	896,490,357	456,527,074	67,226,133
County of Kauai	2.00147942%	-0.04294188%	276,188,794	377,004,250	192,696,241	21,185,380
BWS City and County of Honolulu	0.93158949%	-0.00270722%	128,552,197	171,003,959	93,394,831	12,412,264
DWS County of Hawaii	0.21214145%	-0.02613283%	29,273,892	38,941,002	21,267,861	1,832,139
DOW County of Kauai	0.12562704%	-0.01278245%	17,335,567	23,060,287	12,594,513	1,524,417
HART	0.09200556%	-0.01413327%	12,696,061	16,888,678	9,223,852	-1,558,821
University of Hawaii	11.69512759%	-0.10181467%	1,613,837,822	2,146,775,100	1,172,474,014	111,769,355



**Schedule of Employer Allocations
and Pension Amounts
At June 30, 2023
Exhibit 2**

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

Employer	Deferred Outflows					Deferred Inflows				
	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
State of Hawaii	155,633,812	834,387,754	3,004,941	52,337,371	1,045,363,878	85,051,823	747,878,437	70,220,210	17,838,453	920,988,923
City and County of Honolulu	48,023,996	323,335,276	6,760,869	38,420,312	416,540,453	83,805,565	288,937,215	10,005,705	27,813,407	410,561,892
County of Hawaii	12,066,723	80,126,371	1,599,901	25,678,784	119,471,779	20,081,850	71,613,921	2,711,722	14,767,071	109,174,564
County of Maui	12,580,368	80,096,124	1,363,250	47,341,154	141,380,896	17,929,636	71,623,779	3,436,393	13,749,501	106,739,309
County of Kauai	5,305,471	33,483,312	548,763	3,778,605	43,116,151	7,303,321	29,944,844	1,501,504	11,599,785	50,349,454
BWS City and County of Honolulu	2,532,849	13,504,953	42,330	6,602,415	22,682,547	1,319,309	12,105,745	1,155,934	1,518,881	16,099,869
DWS County of Hawaii	576,780	3,075,346	9,639	325,557	3,987,322	300,433	2,756,719	263,229	3,066,031	6,386,412
DOW County of Kauai	341,561	1,821,175	5,708	2,743,115	4,911,559	177,912	1,632,488	155,880	3,720,221	5,686,501
HART	250,149	1,333,775	4,181	50,949	1,639,054	130,297	1,195,587	114,162	7,825,549	9,265,595
University of Hawaii	31,797,263	169,540,503	531,412	0	201,869,178	16,562,536	151,974,917	14,511,535	75,379,363	258,428,351



**Schedule of Employer Allocations
and Pension Amounts
At June 30, 2023
Exhibit 3**

Deferred Outflows and (Inflows) to be Recognized in Future Years

Employer	Total Deferred Outflow and (Inflow) 2024	Total Deferred Outflow and (Inflow) 2025	Total Deferred Outflow and (Inflow) 2026	Total Deferred Outflows of 2027	Total Deferred Outflows of 2028	Total Deferred Outflows of Thereafter
(1)	(2)	(3)	(4)	(5)	(6)	(7)
State of Hawaii	(33,606,162)	(140,630,740)	206,380,838	89,339,971	2,891,048	-
City and County of Honolulu	(19,209,548)	(68,126,065)	64,657,941	28,544,036	112,197	-
County of Hawaii	(5,893,615)	(12,203,282)	17,507,637	10,281,730	604,745	-
County of Maui	1,577,163	(10,760,018)	24,770,016	17,273,477	1,780,949	-
County of Kauai	(5,610,998)	(8,573,963)	4,871,497	2,184,210	(104,049)	-
BWS City and County of Honolulu	1,351,199	(903,167)	4,602,170	1,492,336	40,140	-
DWS County of Hawaii	(830,592)	(1,143,334)	36,290	(356,043)	(105,411)	-
DOW County of Kauai	(665,430)	(755,549)	783,192	(86,824)	(50,331)	-
HART	(2,621,327)	(2,584,184)	(2,008,960)	(353,785)	(58,285)	-
University of Hawaii	(41,014,327)	(56,569,432)	25,733,607	15,091,566	199,413	-



SECTION G

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

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.



Glossary of Terms (continued)

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:

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;
2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.



Glossary of Terms (continued)

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 ages(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 nonemployer contribution entities to plan members for benefits provided through a defined benefit pension plan.

Nonemployer Contribution Entities

Nonemployer 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 nonemployer contribution entities.



Glossary of Terms (continued)

Normal Cost

The actuarial present value of the pension trust benefits allocated to the current year by the actuarial cost method.

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.

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.

Total Pension Expense

The total pension expense is the sum of the following pension expense items that are recognized from the beginning to the end of the employer's fiscal year:

1. Total service cost;
2. Interest on total pension liability;
3. Current-period benefit changes;
4. Member contributions;
5. Projected earnings on plan investments;
6. Administrative expense;
7. Other Changes in Plan Fiduciary Net Position;
8. Recognition of beginning deferred outflows (inflows) due to liabilities; and
9. Recognition of beginning deferred outflows (inflows) 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.

