



November 1, 2023

Board of Trustees
Teacher Retirement System of Texas
1000 Red River Street
Austin, TX 78701

**Subject: **GASB 67 Reporting and Disclosure Information for the year ending
August 31, 2023****

Dear Board of Trustees,

This report provides information required by the Teacher Retirement System of Texas (TRS) in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67 “Financial Reporting for Pension Plans.” The information provided herein was prepared for the purpose of assisting TRS to comply with the financial reporting and disclosure requirements of GASB No. 67.

The calculation of the liability associated with the benefits described in this report was performed for the purpose of satisfying the requirements of GASB No. 67 and is not applicable for purposes of funding the plan. A calculation of the plan’s liability for other purposes may produce significantly different results. This report may be provided to parties other than TRS only in its entirety and only with the permission of TRS.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of August 31, 2022. The total pension liability was rolled forward from the valuation date to the measurement date of August 31, 2023 using generally accepted actuarial principles. The liabilities reflect the actuarial assumptions adopted by the Board in July of 2022. It is our opinion that the assumptions are internally consistent, reasonable, and comply with the requirements under GASB No. 67. There were no significant events or changes in the benefit provisions that required an adjustment to the rolled forward liabilities.

This report is based upon information, furnished to us by TRS, which include benefit provisions, membership information, and financial data. We did not audit this data and information, but we did apply a number of tests and concluded that it was reasonable and consistent. GRS is not responsible for the accuracy or completeness of the information provided to us by TRS.

The final section of the report titled “Calculation of the Single Discount Rate” is not a required disclosure item for your financial statements. However, it is possible that your auditors will request this information which is why it is included in the report.

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 begins with the information presented for the fiscal year ending August 31, 2014.

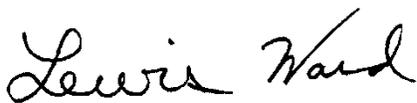
This report compliments the August 31, 2022 actuarial valuation report dated November 22, 2022 that was provided to TRS and should be considered together as a complete report for the plan year ending August 31, 2023. Please see the actuarial valuation report as of August 31, 2022 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions. Also, please see the experience study report dated July 15, 2022 which details the actuarial assumptions used in the determination of the net pension liability. The actuarial cost method used to determine the GASB No. 67 net pension liability is the Individual Entry Age Normal method as prescribed in GASB No. 67.

The projected cash flows from the employer are based on contributions for the most recent five-year period, modified on consideration of subsequent events. Changes in statute in the 2013 legislative session and the subsequent follow through are indicators that the legislature is committed to an increase in funding levels for the pension funds. Additional changes to the contribution levels were adopted in the 2019 legislative session. Based on these events, projected employer contributions are based on the contribution rates adopted by the 2019 legislature.

The actuarial methods and assumptions have been selected by the Board of Trustees of the Teacher Retirement System of Texas based upon GRS analysis and recommendations. The Board of Trustees has sole authority to determine the actuarial assumptions used for the plan. The actuarial methods and assumptions are primarily based on a study of actual experience for the four-year period ending August 31, 2021 and were adopted in July 2022. New assumptions were adopted based on this study and were reflected beginning with the Net Pension Liability as of August 31, 2022.

To the best of our knowledge, the information contained with this report is accurate and fairly represents the actuarial position of the Teacher Retirement System of Texas. 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. Mr. Newton is a member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



Lewis Ward
Consultant



Joe Newton, FSA, EA, MAAA
Pension Market Leader and Actuary

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	475,952
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	544,537
Active Plan Members	<u>928,418</u>
Total Plan Members	1,948,907

All counts are as of the valuation date August 31, 2022

The Average Expected Remaining Service Life (AERSL) of 5.6705 is based on the membership information as of the beginning of the fiscal year. The AERSL of the active employees was 11.9033 years. This calculates to a total remaining service years of $11.9033 \times 928,418 = 11,051,237.98$ years. Divided by the total membership of 1,948,907 as of August 31, 2022 yields an AERSL of 5.6705 years.



Measurement of the Net Pension Liability

The net pension liability is 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 fair 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).

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, the employer contributions, and the state contributions will be made at the rates set by the legislature during the 2019 legislative session (please see the actuarial valuation report for a description of these rates). It is assumed that future non-member contributions will be 9.50% of payroll in fiscal year 2024 increasing to 9.56% of payroll in fiscal year 2025 and thereafter. (these contributions include contributions by the State and the employers for active employees and rehired retirees).

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.

A brief summary of the primary assumptions used in the determination of the net pension liability is shown in the table on the following page.

Changes in Assumptions Since Prior Valuation

The actuarial assumptions and methods are the same as used in the determination of the prior year's Net Pension Liability.

Changes in Benefit Provisions Since Prior Valuation

The Texas 2023 Legislature passed legislation that will provide a one-time stipend to certain retired teachers. The stipend will be paid to retirees in September of 2023. The Legislature also appropriated funds to pay for this one-time stipend so there will be no impact on the Net Pension Liability of TRS. Since both the benefit payment and the appropriation will occur after the end of the fiscal year, it will be reflected in the 2024 GASB 67/68 disclosure information. The Legislature also provided for a cost of living adjustment (COLA) to retirees. However, this adjustment is dependent upon Texas voters approving a constitutional amendment. Therefore, this contingent liability is not reflected as of August 31, 2023. If the voters approve the constitutional amendment then the COLA will be reflected in fiscal year 2024.



Actuarial Assumptions - The total pension liability is determined by an actuarial valuation. The actuarial assumptions used to determine the total pension liability were based on the results of an experience study for the four-year period ending August 31, 2021. The post-retirement mortality rates for healthy lives were based on the 2021 TRS of Texas Healthy Pensioner Mortality Tables, with full generational projection using the ultimate improvement rates from the most recently published projection scale ("U-MP"). The active mortality rates were based on the published PUB(2010) Mortality Tables for Teachers, below median, also with full generational mortality.

The following methods and assumptions were applied to this measurement period:

Valuation Date	August 31, 2022 (total pension liability rolled forward from valuation date to measurement date of August 31, 2023)
Actuarial Cost Method	Individual Entry Age Normal actuarial cost method
Asset Valuation Method	Fair Value
Actuarial Assumptions:	
Single Discount Rate	7.00%
Long-term Expected Return	7.00%
Municipal Bond Rate*	4.13%
Last year ending August 31 in projection period (100 years)	2122
Inflation	2.30%
Salary Increases	2.95% to 8.95% including inflation
Ad hoc post-employment benefit changes	None

* The municipal bond rate used is 4.13% as of August 31, 2023 (i.e. the rate closest to but not later than the Measurement Date). The source for the rate is the Fixed Income Market Data/Yield Curve/Data 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."



Below is a table providing the sensitivity of the net pension liability to changes in the discount rate. In particular, the table presents the plan’s net pension liability, if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher than the single discount rate:

Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption

1% Decrease 6.000%	Current Single Discount Rate Assumption 7.000%	1% Increase 8.000%
\$102,695,878,717	\$68,690,350,942	\$40,414,736,337

Reconciliation of Fiduciary Net Position

for Year Ended August 31, 2023

	<u>Year Ending August 31, 2023</u>
Additions	
Contributions	
Non-Employer Contributing Entity	\$ 2,279,408,927
Employer	2,859,869,972
Employee	4,492,518,277
Other	90,954,914
Total Contributions	<u>\$ 9,722,752,090</u>
Investment Income	
Net Appreciation in Fair Value of Investments	\$ 8,031,581,472
Interest and Dividends	0
Less Investment Expense	(1,145,618,483)
Net Investment Income	<u>\$ 6,885,962,989</u>
Other	<u>\$ 47,535,833</u>
Total Additions	<u>\$ 16,656,250,912</u>
Deductions	
Benefit payments, including refunds of employee contributions	\$ 13,448,229,900
Pension Plan Administrative Expense	85,187,739
Other*	137,914,911
Total Deductions	<u>\$ 13,671,332,550</u>
Net Increase (Decrease) in Net Position	<u>\$ 2,984,918,362</u>
Net Position Restricted for Pensions	
Beginning of Year	<u>\$ 184,185,617,196</u>
End of Year	<u>\$ 187,170,535,558</u>

*The \$761,637 prior period adjustment to the beginning of year Net Position was reflected as an "Other" deduction.



Schedules of Required Supplementary Information

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

Fiscal year ending August 31,	2023	2022	2021	2020	2019
Total Pension Liability					
Service Cost	\$ 6,791,855,509	\$ 6,093,118,860	\$ 5,793,397,669	\$ 5,651,646,985	\$ 5,642,074,695
Interest on the Total Pension Liability	16,815,740,078	16,201,212,879	15,645,734,217	15,014,048,172	14,267,256,072
Benefit Changes	-	0	0	-	588,827,787
Difference between Expected and Actual Experience	2,148,475,358	1,043,774,303	(1,004,526,652)	(259,157,014)	(982,693,577)
Assumption Changes	-	6,651,511,444	0	-	(7,425,278,607)
Benefit Payments	(12,740,413,069)	(13,130,573,776)	(11,686,211,054)	(10,972,292,168)	(11,253,728,973)
Refunds	(707,816,831)	(579,461,885)	(449,135,634)	(421,366,179)	(486,460,902)
Net Change in Total Pension Liability	12,307,841,045	\$ 16,279,581,825	\$ 8,299,258,546	9,012,879,796	349,996,495
Total Pension Liability - Beginning	243,553,045,455	\$ 227,273,463,630	\$ 218,974,205,084	209,961,325,288	209,611,328,793
Total Pension Liability - Ending (a)	\$ 255,860,886,500	\$ 243,553,045,455	\$ 227,273,463,630	\$ 218,974,205,084	\$ 209,961,325,288
Plan Fiduciary Net Position					
Non-Contributing Entity	\$ 2,279,408,927	2,153,483,006	2,140,553,293	\$ 2,107,999,393	\$ 1,737,852,502
Employer Contributions	2,859,869,972	2,504,170,115	2,124,027,701	2,016,481,636	1,761,821,902
Employee Contributions	4,492,518,277	4,213,621,873	3,839,243,646	3,736,877,464	3,482,869,726
Pension Plan Net Investment Income	6,885,962,989	(13,383,750,566)	40,512,139,247	11,068,916,613	7,669,028,874
Benefit Payments	(12,740,413,069)	(13,130,573,776)	(11,686,211,054)	(10,972,292,168)	(11,253,728,973)
Refunds	(707,816,831)	(579,461,885)	(449,135,634)	(421,366,179)	(486,460,902)
Pension Plan Administrative Expense	(85,187,739)	(62,052,780)	(71,359,850)	(67,135,880)	(60,485,645)
Other	575,836	663,178,713	(18,500,096)	(31,434,711)	558,399,758
Net Change in Plan Fiduciary Net Position	2,984,918,362	\$ (17,621,385,300)	\$ 36,390,757,253	7,438,046,168	3,409,297,242
Plan Fiduciary Net Position - Beginning	184,185,617,196	\$ 201,807,002,496	\$ 165,416,245,243	157,978,199,075	154,568,901,833
Plan Fiduciary Net Position - Ending (b)	\$ 187,170,535,558	\$ 184,185,617,196	\$ 201,807,002,496	\$ 165,416,245,243	\$ 157,978,199,075
Net Pension Liability - Ending (a) - (b)	\$ 68,690,350,942	\$ 59,367,428,259	\$ 25,466,461,134	\$ 53,557,959,841	\$ 51,983,126,213
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	73.15 %	75.62 %	88.79 %	75.54 %	75.24 %
Covered Employee Payroll	\$ 56,156,478,463	\$ 52,670,273,413	\$ 49,860,307,091	\$ 48,530,876,156	\$ 45,232,074,364
Net Pension Liability as a Percentage of Covered Employee Payroll	122.32 %	112.72 %	51.08 %	110.36 %	114.93 %

Notes to Schedule:

2018 - Changes of assumptions: The discount rate changed from 8.0% as of August 31, 2017 to a blended rate of 6.907% as of August 31, 2018. The long-term assumed rate of return changed from 8.0% as of August 31, 2017 to 7.25% as of August 31, 2018. Demographic and economic assumptions were updated based on the experience study performed for TRS for the period ending August 31, 2017. The total pension liability as of August 31, 2018 was developed using a roll-forward method from the August 31, 2017 valuation.

2020 - Change of assumptions: The state and employer contribution rate changed from 6.8% to 7.5%. The 1.5% public education employer contribution applied to just employers whose employees were not covered by OASDI in 2019 and it changed in 2020 to apply to all public schools, charter schools and regional education centers irrespective of participation in OASDI.

2021 - Changes of assumptions: The public education employer contribution rate changed from 1.5% in 2020 to 1.6% in 2021.

2022 - Changes of assumptions: Demographic and economic assumptions were updated based on experience study performed for TRS for the period ending August 31, 2021. The primary change was the lowering of the discount rate from 7.25% to 7.00%.



Schedules of Required Supplementary Information

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

Fiscal year ending August 31,	2018	2017	2016	2015	2014
Total Pension Liability					
Service Cost	\$ 4,654,171,138	\$ 4,489,045,421	\$ 4,392,076,679	\$ 4,225,448,833	\$ 3,965,994,265
Interest on the Total Pension Liability	14,109,276,321	13,515,485,995	12,896,571,424	12,555,645,919	11,813,445,940
Benefit Changes	-	-	-	-	-
Difference between Expected and Actual Experience	-	(969,830,844)	373,668,629	(1,588,618,832)	482,638,639
Assumption Changes	22,106,679,263	700,880,288	-	(1,474,723,994)	2,028,541,342
Benefit Payments	(10,172,997,008)	(9,775,775,472)	(9,379,122,730)	(8,935,111,459)	(8,548,642,525)
Refunds	(422,335,740)	(420,421,056)	(373,418,687)	(391,341,181)	(410,600,319)
Net Change in Total Pension Liability	30,274,793,974	7,539,384,332	7,909,775,315	4,391,299,286	9,331,377,342
Total Pension Liability - Beginning	179,336,534,819	171,797,150,487	163,887,375,172	159,496,075,886	150,164,698,544
Total Pension Liability - Ending (a)	\$ 209,611,328,793	\$ 179,336,534,819	\$ 171,797,150,487	\$ 163,887,375,172	\$ 159,496,075,886
Plan Fiduciary Net Position					
Non-Contributing Entity	\$ 1,715,784,550	\$ 1,697,962,608	\$ 1,675,631,248	\$ 1,591,482,988	\$ 1,530,623,829
Employer Contributions	1,671,257,303	1,588,309,345	1,483,389,348	1,377,972,653	984,552,391
Employee Contributions	3,360,773,197	3,242,556,261	2,943,669,320	2,576,024,311	2,357,686,000
Pension Plan Net Investment Income	11,242,813,657	17,079,807,347	9,193,280,560	(412,759,100)	19,434,430,034
Benefit Payments	(10,172,997,008)	(9,775,775,472)	(9,379,122,730)	(8,935,111,459)	(8,548,642,525)
Refunds	(422,335,740)	(420,421,056)	(373,418,687)	(391,341,181)	(410,600,319)
Pension Plan Administrative Expense	(64,926,169)	(44,189,998)	(44,402,710)	(35,556,979)	(41,904,190)
Other	(123,390,077)	(14,964,388)	(29,095,088)	(11,248,106)	84,954,006
Net Change in Plan Fiduciary Net Position	7,206,979,713	13,353,284,647	5,469,931,261	(4,240,536,873)	15,391,099,226
Plan Fiduciary Net Position - Beginning	147,361,922,120	134,008,637,473	128,538,706,212	132,779,243,085	117,388,143,859
Plan Fiduciary Net Position - Ending (b)	\$ 154,568,901,833	\$ 147,361,922,120	\$ 134,008,637,473	\$ 128,538,706,212	\$ 132,779,243,085
Net Pension Liability - Ending (a) - (b)	\$ 55,042,426,960	\$ 31,974,612,699	\$ 37,788,513,014	\$ 35,348,668,960	\$ 26,716,832,801
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	73.74 %	82.17 %	78.00 %	78.43 %	83.25 %
Covered Employee Payroll	\$ 43,646,405,156	\$ 42,111,120,273	\$ 40,742,826,333	\$ 38,448,124,045	\$ 36,654,290,800
Net Pension Liability as a Percentage of Covered Employee Payroll	126.11 %	75.93 %	92.75 %	91.94 %	72.89 %

Notes to Schedule:

See prior page



Schedules of Required Supplementary Information

Schedule of the Net Pension Liability (Historical)

Last 10 Fiscal Years

FY Ending August 31,	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	\$ 159,496,075,886	\$ 132,779,243,085	\$ 26,716,832,801	83.25%	\$ 36,654,290,800	72.89%
2015	163,887,375,172	128,538,706,212	35,348,668,960	78.43%	38,448,124,045	91.94%
2016	171,797,150,487	134,008,637,473	37,788,513,014	78.00%	40,742,826,333	92.75%
2017	179,336,534,819	147,361,922,120	31,974,612,699	82.17%	42,111,120,273	75.93%
2018	209,611,328,793	154,568,901,833	55,042,426,960	73.74%	43,646,405,156	126.11%
2019	209,961,325,288	157,978,199,075	51,983,126,213	75.24%	45,232,074,364	114.93%
2020	218,974,205,084	165,416,245,243	53,557,959,841	75.54%	48,530,876,156	110.36%
2021	227,273,463,630	201,807,002,496	25,466,461,134	88.79%	49,860,307,091	51.08%
2022	243,553,045,455	184,185,617,196	59,367,428,259	75.62%	52,670,273,413	112.72%
2023	255,860,886,500	187,170,535,558	68,690,350,942	73.15%	56,156,478,463	122.32%



SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Contributions

FY Ending August 31,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	\$3,177,927,012	\$2,515,176,220	662,750,792	36,654,290,800	6.86%
2015	3,171,970,234	2,969,455,641	202,514,593	38,448,124,045	7.72%
2016	3,226,831,846	3,159,020,596	67,811,250	40,742,826,333	7.75%
2017	3,343,622,950	3,286,271,953	57,350,997	42,111,120,273	7.80%
2018	3,426,242,805	3,387,041,853	39,200,952	43,646,405,156	7.76%
2019	4,288,000,650	3,499,674,404	788,326,246	45,232,074,364	7.74%
2020	4,527,930,745	4,124,481,029	403,449,716	48,530,876,156	8.50%
2021	4,522,329,853	4,264,580,994	257,748,859	49,860,307,091	8.55%
2022	4,671,853,252	4,657,653,121	14,200,131	52,670,273,413	8.84%
2023	5,318,018,510	5,139,278,899	178,739,611	56,156,478,463	9.15%



Notes to Schedule of Contributions

Valuation Date: August 31, 2022 (to determine contribution rate for fiscal year ending August 31, 2023).

Notes: Actuarially determined contribution rates are calculated as of August 31 preceding fiscal year. Members and employers contribute based on statutorily fixed rates.

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Individual Entry Age Normal actuarial cost method
Amortization Method	Level Percentage of Payroll, Floating
Remaining Amortization Period	26 years based on increased employer and member rates enacted during 2019 legislative session .
Asset Valuation Method	5 Year smoothed market
Inflation	2.30%
Salary Increases	2.95% to 8.95% including inflation
Investment Rate of Return	7.00%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2022 valuation pursuant to an experience study conducted for the period ending on August 31, 2021.
Mortality	The post-retirement mortality rates for healthy lives were based on the 2021 TRS of Texas Healthy Pensioner Mortality Tables, with full generational projection using Scale UMP 2021 (the ultimate rates of MP-2021) but with immediate convergence. The active mortality rates were based on PUB(2010), Amount-Weighted, Below-Median Income, Teacher male and female tables (with a two-year set forward for males), also with full generational mortality using Scale UMP 2021.

Other Information:

Notes The assumptions described above are based on the August 31, 2022 actuarial valuation on which the ADEC is based.



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 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 4.130% (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 September 1, 2023

Year	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Contributions from		Employer Normal Cost Contributions Related to Payroll of Future Employees	Total Contributions
				Current Employees	Employer Contributions for All Employees		
1	48,113,374,528	\$ 9,671,641,810	57,785,016,338	3,849,069,962	5,489,576,552	(413,004,187)	8,925,642,327
2	46,351,597,612	13,109,184,200	59,460,781,812	3,824,006,803	5,684,450,741	(520,982,722)	8,987,474,822
3	44,730,347,900	16,454,796,584	61,185,144,484	3,690,253,702	5,849,299,813	(646,898,074)	8,892,655,441
4	43,164,116,350	19,795,397,324	62,959,513,674	3,561,039,599	6,018,929,507	(770,031,975)	8,809,937,131
5	41,661,493,404	23,123,846,166	64,785,339,571	3,437,073,206	6,193,478,463	(890,481,752)	8,740,069,917
6	40,197,333,606	26,466,780,812	66,664,114,418	3,316,280,023	6,373,089,338	(1,006,776,291)	8,682,593,070
7	38,757,825,868	29,839,547,869	68,597,373,737	3,197,520,634	6,557,908,929	(1,124,528,759)	8,630,900,804
8	37,343,574,750	33,243,122,825	70,586,697,575	3,080,844,917	6,748,088,288	(1,241,701,045)	8,587,232,160
9	35,936,621,364	36,697,090,440	72,633,711,805	2,964,771,263	6,943,782,849	(1,358,880,872)	8,549,673,240
10	34,540,370,524	40,199,718,923	74,740,089,447	2,849,580,568	7,145,152,551	(1,476,247,212)	8,518,485,907
11	33,116,943,672	43,790,608,369	76,907,552,041	2,732,147,853	7,352,361,975	(1,595,130,863)	8,489,378,965
12	31,674,025,737	47,463,845,313	79,137,871,050	2,613,107,123	7,565,580,472	(1,715,408,533)	8,463,279,062
13	30,220,353,993	51,212,515,317	81,432,869,310	2,493,179,204	7,784,982,306	(1,836,906,762)	8,441,254,748
14	28,782,374,554	55,012,047,967	83,794,422,521	2,374,545,901	8,010,746,793	(1,958,945,517)	8,426,347,177
15	27,381,669,813	58,842,790,960	86,224,460,774	2,258,987,760	8,243,058,450	(2,080,978,844)	8,421,067,366
16	26,016,832,873	62,708,137,263	88,724,970,136	2,146,388,712	8,482,107,145	(2,203,242,415)	8,425,253,442
17	24,693,877,394	66,604,116,876	91,297,994,270	2,037,244,885	8,728,088,252	(2,325,827,795)	8,439,505,342
18	23,412,816,284	70,532,819,819	93,945,636,104	1,931,557,343	8,981,202,812	(2,448,800,984)	8,463,959,171
19	22,159,404,050	74,510,655,500	96,670,059,551	1,828,150,834	9,241,657,693	(2,573,010,701)	8,496,797,826
20	20,914,494,438	78,558,996,840	99,473,491,278	1,725,445,791	9,509,665,766	(2,699,426,148)	8,535,685,409
21	19,672,290,601	82,685,931,924	102,358,222,525	1,622,963,975	9,785,446,073	(2,828,610,516)	8,579,799,532
22	18,415,987,556	86,910,623,422	105,326,610,978	1,519,318,973	10,069,224,010	(2,961,693,082)	8,626,849,901
23	17,160,457,262	91,220,625,435	108,381,082,696	1,415,737,724	10,361,231,506	(3,098,409,802)	8,678,559,428
24	15,912,075,325	95,612,058,769	111,524,134,095	1,312,746,214	10,661,707,219	(3,238,600,481)	8,735,852,952
25	14,684,936,882	100,073,397,102	114,758,333,983	1,211,507,293	10,970,896,729	(3,381,755,598)	8,800,648,424
26	13,474,787,961	104,611,537,708	118,086,325,669	1,111,670,007	11,289,052,734	(3,528,422,118)	8,872,300,623
27	12,264,861,675	109,245,967,438	121,510,829,113	1,011,851,088	11,616,435,263	(3,679,914,898)	8,948,371,453
28	11,069,542,313	113,965,100,845	125,034,643,158	913,237,241	11,953,311,886	(3,835,719,006)	9,030,830,121
29	9,901,495,013	118,759,152,796	128,660,647,809	816,873,339	12,299,957,931	(3,995,331,275)	9,121,499,995
30	8,767,550,504	123,624,256,092	132,391,806,596	723,322,917	12,656,656,711	(4,158,524,069)	9,221,455,559
31	7,678,653,747	128,552,515,240	136,231,168,987	633,488,934	13,023,699,755	(4,324,718,912)	9,332,469,777
32	6,649,224,651	133,532,648,236	140,181,872,887	548,561,034	13,401,387,048	(4,493,221,863)	9,456,726,219
33	5,677,796,763	138,569,350,438	144,247,147,201	468,418,233	13,790,027,272	(4,664,294,945)	9,594,150,560
34	4,774,470,450	143,655,844,020	148,430,314,470	393,893,812	14,189,938,063	(4,837,473,876)	9,746,357,999
35	3,941,207,091	148,793,586,499	152,734,793,590	325,149,585	14,601,446,267	(5,012,863,406)	9,913,732,446
36	3,180,663,739	153,983,438,865	157,164,102,604	262,404,758	15,024,888,209	(5,190,584,162)	10,096,708,805
37	2,509,434,528	159,212,427,051	161,721,861,579	207,028,349	15,460,609,967	(5,370,006,164)	10,297,632,152
38	1,938,571,429	164,473,224,136	166,411,795,565	159,932,143	15,908,967,656	(5,550,949,434)	10,517,950,365
39	1,479,242,617	169,758,495,019	171,237,737,637	122,037,516	16,370,327,718	(5,733,017,168)	10,759,348,066
40	1,120,060,977	175,083,571,051	176,203,632,028	92,405,031	16,845,067,222	(5,916,500,365)	11,020,971,888
41	834,789,858	180,478,747,499	181,313,537,357	68,870,163	17,333,574,171	(6,102,271,408)	11,300,172,926
42	612,008,384	185,959,621,556	186,571,629,940	50,490,692	17,836,247,822	(6,290,744,045)	11,595,994,469
43	441,846,590	191,540,360,618	191,982,207,208	36,452,344	18,353,499,009	(6,482,268,752)	11,907,682,601
44	313,318,224	197,236,372,993	197,549,691,217	25,848,754	18,885,750,480	(6,677,318,508)	12,234,280,726
45	216,067,828	203,062,564,435	203,278,632,263	17,825,596	19,433,437,244	(6,876,424,792)	12,574,838,048
46	143,898,018	209,029,814,580	209,173,712,598	11,871,587	19,997,006,924	(7,079,920,992)	12,928,957,519
47	90,749,929	215,149,000,335	215,239,750,264	7,486,869	20,576,920,125	(7,288,195,430)	13,296,211,564
48	52,611,016	221,429,092,006	221,481,703,021	4,340,409	21,173,650,809	(7,501,550,693)	13,676,440,525
49	27,165,875	227,877,506,534	227,904,672,409	2,241,185	21,787,686,682	(7,720,228,070)	14,069,699,797



Single Discount Rate Development

Projection of Contributions Beginning September 1, 2023(continued)

Year	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Employer Normal Cost Contributions Related to Payroll			
				Contributions from Current Employees	Employer Contributions for All Employees	of Future Employees	
50	11,771,506	234,502,136,403	234,513,907,909	971,149	22,419,529,596	(7,944,515,762)	14,475,984,983
51	4,699,515	241,310,111,723	241,314,811,238	387,710	23,069,695,954	(8,174,644,941)	14,895,438,723
52	2,035,977	248,310,904,787	248,312,940,764	167,968	23,738,717,137	(8,410,934,952)	15,327,950,153
53	760,842	255,513,255,204	255,514,016,046	62,769	24,427,139,934	(8,653,697,363)	15,773,505,340
54	170,463	262,923,752,048	262,923,922,512	14,063	25,135,526,992	(8,903,189,477)	16,232,351,578
55	12,506	270,548,703,758	270,548,716,264	1,032	25,864,457,275	(9,159,667,078)	16,704,791,229
56	852	278,394,628,184	278,394,629,036	70	26,614,526,536	(9,423,405,741)	17,191,120,865
57	-	286,468,073,278	286,468,073,278	-	27,386,347,805	(9,694,687,752)	17,691,660,053
58	-	294,775,647,403	294,775,647,403	-	28,180,551,892	(9,973,796,892)	18,206,755,000
59	-	303,324,141,178	303,324,141,178	-	28,997,787,897	(10,261,022,333)	18,736,765,564
60	-	312,120,541,272	312,120,541,272	-	29,838,723,746	(10,556,655,781)	19,282,067,965
61	-	321,172,036,969	321,172,036,969	-	30,704,046,734	(10,860,988,530)	19,843,058,204
62	-	330,486,026,041	330,486,026,041	-	31,594,464,090	(11,174,311,540)	20,420,152,550
63	-	340,070,120,796	340,070,120,796	-	32,510,703,548	(11,496,918,710)	21,013,784,838
64	-	349,932,154,299	349,932,154,299	-	33,453,513,951	(11,829,107,870)	21,624,406,081
65	-	360,080,186,774	360,080,186,774	-	34,423,665,856	(12,171,179,193)	22,252,486,663
66	-	370,522,512,190	370,522,512,190	-	35,421,952,165	(12,523,431,354)	22,898,520,811
67	-	381,267,665,044	381,267,665,044	-	36,449,188,778	(12,886,160,255)	23,563,028,523
68	-	392,324,427,330	392,324,427,330	-	37,506,215,253	(13,259,661,439)	24,246,553,814
69	-	403,701,835,723	403,701,835,723	-	38,593,895,495	(13,644,231,036)	24,949,664,459
70	-	415,409,188,959	415,409,188,959	-	39,713,118,464	(14,040,168,077)	25,672,950,387
71	-	427,456,055,439	427,456,055,439	-	40,864,798,900	(14,447,777,322)	26,417,021,578
72	-	439,852,281,046	439,852,281,046	-	42,049,878,068	(14,867,370,711)	27,182,507,357
73	-	452,607,997,197	452,607,997,197	-	43,269,324,532	(15,299,268,039)	27,970,056,493
74	-	465,733,629,115	465,733,629,115	-	44,524,134,943	(15,743,797,791)	28,780,337,152
75	-	479,239,904,360	479,239,904,360	-	45,815,334,857	(16,201,296,810)	29,614,038,047
76	-	493,137,861,586	493,137,861,586	-	47,143,979,568	(16,672,110,908)	30,471,868,660
77	-	507,438,859,572	507,438,859,572	-	48,511,154,975	(17,156,595,248)	31,354,559,727
78	-	522,154,586,500	522,154,586,500	-	49,917,978,469	(17,655,114,776)	32,262,863,693
79	-	537,297,069,508	537,297,069,508	-	51,365,599,845	(18,168,047,460)	33,197,552,385
80	-	552,878,684,524	552,878,684,524	-	52,855,202,240	(18,695,786,059)	34,159,416,181
81	-	568,912,166,375	568,912,166,375	-	54,388,003,105	(19,238,739,060)	35,149,264,045
82	-	585,410,619,200	585,410,619,200	-	55,965,255,196	(19,797,332,301)	36,167,922,895
83	-	602,387,527,157	602,387,527,157	-	57,588,247,596	(20,372,009,676)	37,216,237,920
84	-	619,856,765,444	619,856,765,444	-	59,258,306,776	(20,963,232,513)	38,295,074,263
85	-	637,832,611,642	637,832,611,642	-	60,976,797,673	(21,571,479,275)	39,405,318,398
86	-	656,329,757,380	656,329,757,380	-	62,745,124,806	(22,197,245,603)	40,547,879,203
87	-	675,363,320,344	675,363,320,344	-	64,564,733,425	(22,841,044,088)	41,723,689,337
88	-	694,948,856,634	694,948,856,634	-	66,437,110,694	(23,503,404,484)	42,933,706,210
89	-	715,102,373,476	715,102,373,476	-	68,363,786,904	(24,184,873,805)	44,178,913,099
90	-	735,840,342,307	735,840,342,307	-	70,346,336,725	(24,886,016,626)	45,460,320,099
91	-	757,179,712,234	757,179,712,234	-	72,386,380,490	(25,607,415,686)	46,778,964,804
92	-	779,137,923,889	779,137,923,889	-	74,485,585,524	(26,349,671,977)	48,135,913,547
93	-	801,732,923,682	801,732,923,682	-	76,645,667,504	(27,113,404,782)	49,532,262,722
94	-	824,983,178,468	824,983,178,468	-	78,868,391,862	(27,899,251,819)	50,969,140,043
95	-	848,907,690,644	848,907,690,644	-	81,155,575,226	(28,707,869,287)	52,447,705,939
96	-	873,526,013,673	873,526,013,673	-	83,509,086,907	(29,627,284,424)	53,881,802,483
97	-	898,858,268,069	898,858,268,069	-	85,930,850,427	(30,486,018,474)	55,444,831,953
98	-	924,925,157,843	924,925,157,843	-	88,422,845,090	(31,369,676,346)	57,053,168,744
99	-	951,747,987,421	951,747,987,421	-	90,987,107,597	(32,994,423,947)	57,992,683,650



Single Discount Rate Development

PROJECTION OF PLAN FIDUCIARY NET POSITION BEGINNING SEPTEMBER 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	187,170,535,558	8,925,642,327	13,527,267,933	52,924,712	12,941,783,520	195,457,768,760
2	195,457,768,760	8,987,474,822	14,165,619,428	50,986,757	13,502,119,635	203,730,757,032
3	203,730,757,032	8,892,655,441	14,817,371,618	49,203,383	14,055,602,109	211,812,439,581
4	211,812,439,581	8,809,937,131	15,496,268,186	47,480,528	14,595,173,490	219,673,801,488
5	219,673,801,488	8,740,069,917	16,216,147,415	45,827,643	15,118,352,067	227,270,248,413
6	227,270,248,413	8,682,593,070	16,956,303,968	44,217,067	15,622,713,764	234,575,034,212
7	234,575,034,212	8,630,900,804	17,717,473,503	42,633,608	16,106,134,269	241,551,962,174
8	241,551,962,174	8,587,232,160	18,480,780,302	41,077,932	16,566,806,308	248,184,142,408
9	248,184,142,408	8,549,673,240	19,253,027,846	39,530,284	17,003,248,320	254,444,505,838
10	254,444,505,838	8,518,485,907	20,026,375,119	37,994,408	17,413,844,145	260,312,466,365
11	260,312,466,365	8,489,378,965	20,817,054,194	36,428,638	17,796,448,025	265,744,810,522
12	265,744,810,522	8,463,279,062	21,599,053,720	34,841,428	18,148,961,608	270,723,156,045
13	270,723,156,045	8,441,254,748	22,367,256,911	33,242,389	18,470,310,632	275,234,222,126
14	275,234,222,126	8,426,347,177	23,097,653,375	31,660,612	18,760,495,230	279,291,750,546
15	279,291,750,546	8,421,067,366	23,774,548,239	30,119,837	19,021,102,939	282,929,252,775
16	282,929,252,775	8,425,253,442	24,405,528,789	28,618,516	19,254,212,981	286,174,571,893
17	286,174,571,893	8,439,505,342	24,990,147,153	27,163,265	19,461,810,198	289,058,577,015
18	289,058,577,015	8,463,959,171	25,538,164,936	25,754,098	19,645,724,232	291,604,341,385
19	291,604,341,385	8,496,797,826	26,060,824,242	24,375,344	19,807,121,408	293,823,061,033
20	293,823,061,033	8,535,685,409	26,571,174,255	23,005,944	19,946,256,802	295,710,823,045
21	295,710,823,045	8,579,799,532	27,075,073,086	21,639,520	20,062,626,867	297,256,536,837
22	297,256,536,837	8,626,849,901	27,592,522,261	20,257,586	20,154,688,879	298,425,295,771
23	298,425,295,771	8,678,559,428	28,102,847,389	18,876,503	20,220,769,460	299,202,900,767
24	299,202,900,767	8,735,852,952	28,594,769,826	17,503,283	20,260,294,329	299,586,774,939
25	299,586,774,939	8,800,648,424	29,051,923,978	16,153,431	20,273,711,672	299,593,057,626
26	299,593,057,626	8,872,300,623	29,490,660,255	14,822,267	20,261,566,618	299,221,442,345
27	299,221,442,345	8,948,371,453	29,942,431,883	13,491,348	20,222,672,213	298,436,562,780
28	298,436,562,780	9,030,830,121	30,380,865,867	12,176,497	20,155,527,471	297,229,878,009
29	297,229,878,009	9,121,499,995	30,785,837,235	10,891,645	20,060,289,247	295,614,938,371
30	295,614,938,371	9,221,455,559	30,922,507,838	9,644,306	19,946,023,098	293,850,264,885
31	293,850,264,885	9,332,469,777	31,222,737,468	8,446,519	19,816,026,636	291,767,577,310
32	291,767,577,310	9,456,726,219	31,440,874,889	7,314,147	19,667,047,207	289,443,161,701
33	289,443,161,701	9,594,150,560	31,580,968,233	6,245,576	19,504,283,047	286,954,381,499
34	286,954,381,499	9,746,357,999	31,625,677,789	5,251,917	19,333,801,414	284,403,611,205
35	284,403,611,205	9,913,732,446	31,572,332,848	4,335,328	19,162,873,554	281,903,549,029
36	281,903,549,029	10,096,708,805	31,415,008,460	3,498,730	18,999,607,070	279,581,357,715
37	279,581,357,715	10,297,632,152	31,127,260,938	2,760,378	18,853,893,292	277,602,861,842
38	277,602,861,842	10,517,950,365	30,694,076,416	2,132,429	18,737,905,938	276,162,509,301
39	276,162,509,301	10,759,348,066	30,099,034,096	1,627,167	18,665,878,910	275,487,075,013
40	275,487,075,013	11,020,971,888	29,366,613,909	1,232,067	18,652,815,213	275,793,016,138
41	275,793,016,138	11,300,172,926	28,538,844,849	918,269	18,712,330,564	277,265,756,511
42	277,265,756,511	11,595,994,469	27,630,194,375	673,209	18,856,874,348	280,087,757,743
43	280,087,757,743	11,907,682,601	26,651,836,276	486,031	19,098,808,841	284,441,926,877
44	284,441,926,877	12,234,280,726	25,617,528,699	344,650	19,450,431,647	290,508,765,901
45	290,508,765,901	12,574,838,048	24,540,354,858	237,675	19,923,895,415	298,466,906,831
46	298,466,906,831	12,928,957,519	23,428,615,517	158,288	20,531,405,345	308,498,495,890
47	308,498,495,890	13,296,211,564	22,290,900,361	99,825	21,285,401,636	320,789,108,905
48	320,789,108,905	13,676,440,525	21,134,167,907	57,872	22,198,629,826	335,529,953,476
49	335,529,953,476	14,069,699,797	19,963,978,189	29,882	23,284,285,129	352,919,930,330
50	352,919,930,330	14,475,984,983	18,786,549,932	12,949	24,556,076,572	373,165,429,005



Single Discount Rate Development

Projection of Plan Fiduciary Net Position Beginning September 1, 2023 (continued)

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)
51	373,165,429,005	14,895,438,723	17,607,382,681	5,169	26,028,267,167	396,481,747,044
52	396,481,747,044	15,327,950,153	16,434,565,529	2,240	27,715,645,746	423,090,775,176
53	423,090,775,176	15,773,505,340	15,275,341,347	837	29,633,495,082	453,222,433,414
54	453,222,433,414	16,232,351,578	14,134,474,791	188	31,797,754,168	487,118,064,182
55	487,118,064,182	16,704,791,229	13,016,293,045	14	34,225,178,497	525,031,740,849
56	525,031,740,849	17,191,120,865	11,925,230,763	1	36,933,410,834	567,231,041,785
57	567,231,041,785	17,691,660,053	10,865,620,871	-	39,941,043,577	613,998,124,543
58	613,998,124,543	18,206,755,000	9,841,640,602	-	43,267,695,936	665,630,934,878
59	665,630,934,878	18,736,765,564	8,857,477,162	-	46,934,092,424	722,444,315,704
60	722,444,315,704	19,282,067,965	7,917,201,647	-	50,962,144,911	784,771,326,934
61	784,771,326,934	19,843,058,204	7,024,640,933	-	55,375,049,542	852,964,793,746
62	852,964,793,746	20,420,152,550	6,183,308,252	-	60,197,397,517	927,399,035,561
63	927,399,035,561	21,013,784,838	5,396,277,879	-	65,455,300,345	1,008,471,842,865
64	1,008,471,842,865	21,624,406,081	4,666,088,327	-	71,176,531,532	1,096,606,692,151
65	1,096,606,692,151	22,252,486,663	3,994,672,558	-	77,390,684,108	1,192,255,190,364
66	1,192,255,190,364	22,898,520,811	3,383,259,688	-	84,129,345,275	1,295,899,796,762
67	1,295,899,796,762	23,563,028,523	2,832,318,854	-	91,426,288,929	1,408,056,795,359
68	1,408,056,795,359	24,246,553,814	2,341,512,361	-	99,317,685,290	1,529,279,522,102
69	1,529,279,522,102	24,949,664,459	1,909,622,291	-	107,842,329,315	1,660,161,893,585
70	1,660,161,893,585	25,672,950,387	1,534,585,888	-	117,041,886,441	1,801,342,144,525
71	1,801,342,144,525	26,417,021,578	1,213,545,852	-	126,961,152,400	1,953,506,772,652
72	1,953,506,772,652	27,182,507,357	942,949,138	-	137,648,325,940	2,117,394,656,811
73	2,117,394,656,811	27,970,056,493	718,717,933	-	149,155,291,213	2,293,801,286,585
74	2,293,801,286,585	28,780,337,152	536,382,062	-	161,537,909,290	2,483,583,150,965
75	2,483,583,150,965	29,614,038,047	391,228,443	-	174,856,320,265	2,687,662,280,835
76	2,687,662,280,835	30,471,868,660	278,413,466	-	189,175,257,372	2,907,030,993,401
77	2,907,030,993,401	31,354,559,727	193,037,385	-	204,564,376,547	3,142,756,892,290
78	3,142,756,892,290	32,262,863,693	130,264,685	-	221,098,602,318	3,395,988,093,616
79	3,395,988,093,616	33,197,552,385	85,501,263	-	238,858,487,441	3,667,958,632,179
80	3,667,958,632,179	34,159,416,181	54,580,132	-	257,930,584,927	3,959,994,053,156
81	3,959,994,053,156	35,149,264,045	33,903,918	-	278,407,834,552	4,273,517,247,834
82	4,273,517,247,834	36,167,922,895	20,520,345	-	300,389,968,740	4,610,054,619,124
83	4,610,054,619,124	37,216,237,920	12,126,202	-	323,983,944,025	4,971,242,674,867
84	4,971,242,674,867	38,295,074,263	7,013,569	-	349,304,404,490	5,358,835,140,051
85	5,358,835,140,051	39,405,318,398	3,979,767	-	376,474,182,768	5,774,710,661,451
86	5,774,710,661,451	40,547,879,203	2,218,967	-	405,624,843,134	6,220,881,164,821
87	6,220,881,164,821	41,723,689,337	1,216,671	-	436,897,270,183	6,699,500,907,669
88	6,699,500,907,669	42,933,706,210	656,574	-	470,442,305,767	7,212,876,263,072
89	7,212,876,263,072	44,178,913,099	348,939	-	506,421,436,363	7,763,476,263,595
90	7,763,476,263,595	45,460,320,099	182,604	-	545,007,532,830	8,353,943,933,920
91	8,353,943,933,920	46,778,964,804	94,001	-	586,385,644,786	8,987,108,449,508
92	8,987,108,449,508	48,135,913,547	47,554	-	630,753,852,426	9,665,998,167,927
93	9,665,998,167,927	49,532,262,722	23,573	-	678,324,179,183	10,393,854,586,260
94	10,393,854,586,260	50,969,140,043	11,349	-	729,323,569,024	11,174,147,283,978
95	11,174,147,283,978	52,447,705,939	5,250	-	783,994,932,634	12,010,589,917,300
96	12,010,589,917,300	53,881,802,483	2,293	-	842,595,261,524	12,907,066,979,014
97	12,907,066,979,014	55,444,831,953	969	-	905,402,436,675	13,867,914,246,674
98	13,867,914,246,674	57,053,168,744	415	-	972,717,085,152	14,897,684,500,155
99	14,897,684,500,155	57,992,683,650	193	-	1,044,833,329,773	16,000,510,513,385



Single Discount Rate Development

Present Values of Projected Benefits Beginning September 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	\$ 187,170,535,558	\$ 13,527,267,933	\$ 13,527,267,933	\$ -	\$ 12,221,778,980	\$ -	\$ 12,221,778,980
2	195,457,768,760	14,165,619,428	14,165,619,428	-	11,961,237,829	-	11,961,237,829
3	203,730,757,032	14,817,371,618	14,817,371,618	-	11,693,053,889	-	11,693,053,889
4	211,812,439,581	15,496,268,186	15,496,268,186	-	11,428,786,619	-	11,428,786,619
5	219,673,801,488	16,216,147,415	16,216,147,415	-	11,177,299,970	-	11,177,299,970
6	227,270,248,413	16,956,303,968	16,956,303,968	-	10,922,866,819	-	10,922,866,819
7	234,575,034,212	17,717,473,503	17,717,473,503	-	10,666,537,371	-	10,666,537,371
8	241,551,962,174	18,480,780,302	18,480,780,302	-	10,398,200,657	-	10,398,200,657
9	248,184,142,408	19,253,027,846	19,253,027,846	-	10,124,023,649	-	10,124,023,649
10	254,444,505,838	20,026,375,119	20,026,375,119	-	9,841,757,981	-	9,841,757,981
11	260,312,466,365	20,817,054,194	20,817,054,194	-	9,561,055,285	-	9,561,055,285
12	265,744,810,522	21,599,053,720	21,599,053,720	-	9,271,233,168	-	9,271,233,168
13	270,723,156,045	22,367,256,911	22,367,256,911	-	8,972,877,265	-	8,972,877,265
14	275,234,222,126	23,097,653,375	23,097,653,375	-	8,659,704,711	-	8,659,704,711
15	279,291,750,546	23,774,548,239	23,774,548,239	-	8,330,359,024	-	8,330,359,024
16	282,929,252,775	24,405,528,789	24,405,528,789	-	7,992,007,634	-	7,992,007,634
17	286,174,571,893	24,990,147,153	24,990,147,153	-	7,648,084,964	-	7,648,084,964
18	289,058,577,015	25,538,164,936	25,538,164,936	-	7,304,488,343	-	7,304,488,343
19	291,604,341,385	26,060,824,242	26,060,824,242	-	6,966,337,042	-	6,966,337,042
20	293,823,061,033	26,571,174,255	26,571,174,255	-	6,638,092,578	-	6,638,092,578
21	295,710,823,045	27,075,073,086	27,075,073,086	-	6,321,474,893	-	6,321,474,893
22	297,256,536,837	27,592,522,261	27,592,522,261	-	6,020,830,537	-	6,020,830,537
23	298,425,295,771	28,102,847,389	28,102,847,389	-	5,731,015,056	-	5,731,015,056
24	299,202,900,767	28,594,769,826	28,594,769,826	-	5,449,843,759	-	5,449,843,759
25	299,586,774,939	29,051,923,978	29,051,923,978	-	5,174,740,407	-	5,174,740,407
26	299,593,057,626	29,490,660,255	29,490,660,255	-	4,909,241,392	-	4,909,241,392
27	299,221,442,345	29,942,431,883	29,942,431,883	-	4,658,361,458	-	4,658,361,458
28	298,436,562,780	30,380,865,867	30,380,865,867	-	4,417,356,837	-	4,417,356,837
29	297,229,878,009	30,785,837,235	30,785,837,235	-	4,183,401,302	-	4,183,401,302
30	295,614,938,371	30,922,507,838	30,922,507,838	-	3,927,077,652	-	3,927,077,652
31	293,850,264,885	31,222,737,468	31,222,737,468	-	3,705,800,028	-	3,705,800,028
32	291,767,577,310	31,440,874,889	31,440,874,889	-	3,487,561,282	-	3,487,561,282
33	289,443,161,701	31,580,968,233	31,580,968,233	-	3,273,926,222	-	3,273,926,222
34	286,954,381,499	31,625,677,789	31,625,677,789	-	3,064,075,849	-	3,064,075,849
35	284,403,611,205	31,572,332,848	31,572,332,848	-	2,858,792,044	-	2,858,792,044
36	281,903,549,029	31,415,008,460	31,415,008,460	-	2,658,454,891	-	2,658,454,891
37	279,581,357,715	31,127,260,938	31,127,260,938	-	2,461,780,023	-	2,461,780,023
38	277,602,861,842	30,694,076,416	30,694,076,416	-	2,268,710,751	-	2,268,710,751
39	276,162,509,301	30,099,034,096	30,099,034,096	-	2,079,185,991	-	2,079,185,991
40	275,487,075,013	29,366,613,909	29,366,613,909	-	1,895,880,140	-	1,895,880,140
41	275,793,016,138	28,538,844,849	28,538,844,849	-	1,721,906,702	-	1,721,906,702
42	277,265,756,511	27,630,194,375	27,630,194,375	-	1,558,021,292	-	1,558,021,292
43	280,087,757,743	26,651,836,276	26,651,836,276	-	1,404,535,781	-	1,404,535,781
44	284,441,926,877	25,617,528,699	25,617,528,699	-	1,261,708,778	-	1,261,708,778
45	290,508,765,901	24,540,354,858	24,540,354,858	-	1,129,585,096	-	1,129,585,096
46	298,466,906,831	23,428,615,517	23,428,615,517	-	1,007,861,749	-	1,007,861,749
47	308,498,495,890	22,290,900,361	22,290,900,361	-	896,186,032	-	896,186,032
48	320,789,108,905	21,134,167,907	21,134,167,907	-	794,094,039	-	794,094,039
49	335,529,953,476	19,963,978,189	19,963,978,189	-	701,051,772	-	701,051,772



Single Discount Rate Development

PVs of Projected Benefits Beginning September 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
50	\$ 352,919,930,330	\$ 18,786,549,932	\$ 18,786,549,932	\$ -	\$ 616,547,098	\$ -	\$ 616,547,098
51	373,165,429,005	17,607,382,681	17,607,382,681	-	540,045,377	-	540,045,377
52	396,481,747,044	16,434,565,529	16,434,565,529	-	471,096,523	-	471,096,523
53	423,090,775,176	15,275,341,347	15,275,341,347	-	409,221,853	-	409,221,853
54	453,222,433,414	14,134,474,791	14,134,474,791	-	353,886,334	-	353,886,334
55	487,118,064,182	13,016,293,045	13,016,293,045	-	304,570,374	-	304,570,374
56	525,031,740,849	11,925,230,763	11,925,230,763	-	260,785,447	-	260,785,447
57	567,231,041,785	10,865,620,871	10,865,620,871	-	222,068,690	-	222,068,690
58	613,998,124,543	9,841,640,602	9,841,640,602	-	187,982,104	-	187,982,104
59	665,630,934,878	8,857,477,162	8,857,477,162	-	158,115,800	-	158,115,800
60	722,444,315,704	7,917,201,647	7,917,201,647	-	132,084,895	-	132,084,895
61	784,771,326,934	7,024,640,933	7,024,640,933	-	109,527,154	-	109,527,154
62	852,964,793,746	6,183,308,252	6,183,308,252	-	90,102,075	-	90,102,075
63	927,399,035,561	5,396,277,879	5,396,277,879	-	73,489,353	-	73,489,353
64	1,008,471,842,865	4,666,088,327	4,666,088,327	-	59,388,081	-	59,388,081
65	1,096,606,692,151	3,994,672,558	3,994,672,558	-	47,516,424	-	47,516,424
66	1,192,255,190,364	3,383,259,688	3,383,259,688	-	37,610,934	-	37,610,934
67	1,295,899,796,762	2,832,318,854	2,832,318,854	-	29,426,401	-	29,426,401
68	1,408,056,795,359	2,341,512,361	2,341,512,361	-	22,735,666	-	22,735,666
69	1,529,279,522,102	1,909,622,291	1,909,622,291	-	17,329,057	-	17,329,057
70	1,660,161,893,585	1,534,585,888	1,534,585,888	-	13,014,721	-	13,014,721
71	1,801,342,144,525	1,213,545,852	1,213,545,852	-	9,618,693	-	9,618,693
72	1,953,506,772,652	942,949,138	942,949,138	-	6,984,967	-	6,984,967
73	2,117,394,656,811	718,717,933	718,717,933	-	4,975,661	-	4,975,661
74	2,293,801,286,585	536,382,062	536,382,062	-	3,470,426	-	3,470,426
75	2,483,583,150,965	391,228,443	391,228,443	-	2,365,676	-	2,365,676
76	2,687,662,280,835	278,413,466	278,413,466	-	1,573,371	-	1,573,371
77	2,907,030,993,401	193,037,385	193,037,385	-	1,019,527	-	1,019,527
78	3,142,756,892,290	130,264,685	130,264,685	-	642,984	-	642,984
79	3,395,988,093,616	85,501,263	85,501,263	-	394,423	-	394,423
80	3,667,958,632,179	54,580,132	54,580,132	-	235,310	-	235,310
81	3,959,994,053,156	33,903,918	33,903,918	-	136,607	-	136,607
82	4,273,517,247,834	20,520,345	20,520,345	-	77,272	-	77,272
83	4,610,054,619,124	12,126,202	12,126,202	-	42,676	-	42,676
84	4,971,242,674,867	7,013,569	7,013,569	-	23,068	-	23,068
85	5,358,835,140,051	3,979,767	3,979,767	-	12,233	-	12,233
86	5,774,710,661,451	2,218,967	2,218,967	-	6,375	-	6,375
87	6,220,881,164,821	1,216,671	1,216,671	-	3,267	-	3,267
88	6,699,500,907,669	656,574	656,574	-	1,647	-	1,647
89	7,212,876,263,072	348,939	348,939	-	818	-	818
90	7,763,476,263,595	182,604	182,604	-	400	-	400
91	8,353,943,933,920	94,001	94,001	-	193	-	193
92	8,987,108,449,508	47,554	47,554	-	91	-	91
93	9,665,998,167,927	23,573	23,573	-	42	-	42
94	10,393,854,586,260	11,349	11,349	-	19	-	19
95	11,174,147,283,978	5,250	5,250	-	8	-	8
96	12,010,589,917,300	2,293	2,293	-	3	-	3
97	12,907,066,979,014	969	969	-	1	-	1
98	13,867,914,246,674	415	415	-	1	-	1
99	14,897,684,500,155	193	193	-	0	-	0
Totals					\$ 284,990,375,656	\$ -	\$ 284,990,375,656

