

# Wyoming Retirement System – Public Employee Plan

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

For Measurement Date as of December 31, 2023





March 27, 2024

Board of Trustees  
Wyoming Retirement System

Dear Board Members:

This report provides information required by the Wyoming Retirement System (WRS) in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67 and 68 for the Wyoming Retirement System ("WRS"). These calculations have been made on a basis that is consistent with our understanding of these Statements.

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

Our calculation of the liability associated with the benefits described in this report was performed for the purpose of providing reporting and disclosure information that satisfies the requirements of GASB Statement Nos. 67 and 68. The Net Pension Liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The Net Pension Liability is not an appropriate measure for assessing the need for or amount of future employer contributions. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than the Wyoming Retirement System ("WRS") only in its entirety and only with the permission of WRS. GRS is not responsible for unauthorized use of this report.

This report is based upon information, furnished to us by WRS, concerning retirement and ancillary benefits, active members, deferred vested members, retirees and beneficiaries, and financial data. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by WRS.

This report complements the actuarial valuation report that was provided to WRS and should be considered in conjunction with that report. Please see the actuarial valuation report as of January 1, 2023 for additional discussion of the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions. Furthermore, this report includes the assumptions adopted by the Board at the November 17, 2021 and the February 17, 2022 meetings. For a detailed description of the experience related to these assumptions, as well as the rationale for any changes, please see our latest Wyoming Retirement System Actuarial Experience Study Report that covered the five-year investigation period ending December 31, 2020.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.


This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, the information contained in this report is accurate and fairly presents the actuarial position of the Wyoming Retirement System as of the valuation date.

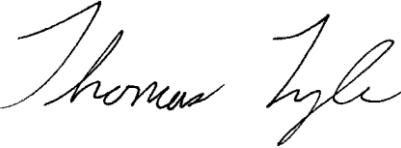
All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.


Paul T. Wood, Thomas A. Lyle, Dana Woolfrey, and Karli Fehrman are members of the American Academy of Actuaries (MAAA) and are experienced in performing valuations for public retirement systems. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing actuaries are independent of the plan sponsor.


Respectfully submitted,

**Gabriel, Roeder, Smith & Company**

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# SECTION A

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## EXECUTIVE SUMMARY

# Executive Summary as of December 31, 2023

	<b>2023</b>
Actuarial Valuation Date	January 1, 2023
Measurement Date of the Net Pension Liability	December 31, 2023
Employer's Fiscal Year Ending Date (Reporting Date)	December 31, 2023
 <b>Membership</b>	
Number of	
- Retirees and Beneficiaries	30,855
- Inactive, Nonretired Members	27,317
- Active Members	34,712
- Total	92,884
Covered Payroll	\$ 1,878,317,543
 <b>Net Pension Liability</b>	
Total Pension Liability	\$ 11,461,215,301
Plan Fiduciary Net Position	9,191,034,051
Net Pension Liability	\$ 2,270,181,250
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	80.19 %
Net Pension Liability as a Percentage of Covered Payroll	120.86 %
 <b>Development of the Single Discount Rate</b>	
Single Discount Rate	6.80 %
Long-Term Expected Rate of Investment Return	6.80 %
Long-Term Municipal Bond Rate*	3.77 %
Last year ending December 31 in the 2023 to 2122 projection period for which projected benefit payments are fully funded	2122
 <b>Total Pension Expense</b>	 \$ 56,683,150

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

	Deferred Outflows of Resources	Deferred Inflows of Resources
Difference between expected and actual experience	\$ 43,859,998	\$ 9,917,230
Changes in assumptions	23,303,139	0
Net difference between projected and actual earnings on pension plan investments	762,930,209	843,401,494
Total	\$ 830,093,346	\$ 853,318,724

*\*Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of December 31, 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 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

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

## Financial Statements

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

Paragraph 34 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to WRS subsequent to the measurement date of December 31, 2023.

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

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

## Notes to Financial Statements

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

GASB Statement Nos. 67 and 68 require the notes of the financial statements for the employers and pension plans to include certain additional information. The list of disclosure items should include:

- a description of benefits provided by the plan;
- the type of employees and number of members covered by the pension plan;
- a description of the plan's funding policy, which includes member and employer contribution requirements;
- the pension plan's investment policies;
- the pension plan's fiduciary net position and the net pension liability;
- the net pension liability using a discount rate that is 1% higher and 1% lower than used to calculate the total pension liability and net pension liability for financial reporting purposes;
- significant assumptions and methods used to calculate the total pension liability;
- inputs to the discount rates; and
- certain information about mortality assumptions and the dates of experience studies.

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

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

## Required Supplementary Information

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

- sources of changes in the net pension liability;
- information about the components of the net pension liability and related ratios, including the pension plan's fiduciary net position as a percentage of the total pension liability, and the net pension liability as a percent of covered-employee payroll; and
- a comparison of the actual employer contributions to the actuarially determined contributions based on the plan's funding policy.



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

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

1. The employer normal cost as a percentage of pay is expected to decrease slightly as a percentage of payroll.
2. The unfunded liability is expected to decrease as a percentage of payroll.
3. The unfunded liability is expected to be fully amortized during the lifetimes of current members.
4. The funded status of the plan is expected to increase gradually towards a 100% funded ratio.

This funding policy results in no expected crossover date and a GASB single discount rate of 6.80%. This funding policy results in the expectation that the plan's assets will be able to fully pay for promised benefits through at least 2122. The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

### **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 January 1, 2023 and rolled forward to a measurement date of December 31, 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 (which is published by the Federal Reserve) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 6.80%; the municipal bond rate is 3.77% (based on the daily rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index"); and the resulting Single Discount Rate is 6.80%.

## Effective Date and Transition

GASB Statement Nos. 67 and 68 are effective for fiscal years beginning after June 15, 2013, and June 15, 2014 respectively, earlier application is encouraged by the GASB.

## SECTION B

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### FINANCIAL STATEMENTS

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

# Statement of Pension Expense under GASB Statement No. 68

## Fiscal Year Ended December 31, 2023

### A. Expense

1. Service Cost	\$	218,085,360
2. Interest on the Total Pension Liability		745,396,547
3. Current-Period Benefit Changes		0
4. Employee Contributions (made negative for addition here)		(188,190,449)
5. Projected Earnings on Plan Investments (made negative for addition here)		(560,551,244)
6. Pension Plan Administrative Expense		8,581,173
7. Other Changes in Plan Fiduciary Net Position		653,550
8. Recognition of Outflow (Inflow) of Resources due to Liabilities		72,724,559
9. Recognition of Outflow (Inflow) of Resources due to Assets		(240,016,346)
<b>10. Total Pension Expense</b>	<b>\$</b>	<b>56,683,150</b> *

\* In accordance with GASB 71, employers may need to illustrate contributions made after the measurement date.

# Statement of Outflows and Inflows Arising from Current Reporting Period Fiscal Year Ended December 31, 2023

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

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$	60,247,391
2. Assumption Changes (gains) or losses	\$	0
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		3.6117
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	\$	16,681,173
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	\$	16,681,173
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	\$	43,566,218
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	\$	43,566,218

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

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$	(555,729,319)
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	\$	(111,145,864)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$	(444,583,455)

# History of Deferred Outflows and Inflows of Resources by Source

## Fiscal Year Ended December 31, 2023

**Differences between expected and actual experience - Net (inflows)/outflows of resources**

Recognition Period	4.0139	3.9136	3.8583	4.1947	4.0527	3.9563	3.8962	3.4657	3.3390	3.6117		Deferred Net (Inflows)/Outflows at Measurement Date
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total	
<b>Total</b>	\$ -	\$ (66,191,620)	\$ (43,790,701)	\$ (56,701,091)	\$ (49,213,548)	\$ (7,044,256)	\$ 55,560,847	\$ 2,186,282	\$ (24,730,118)	\$ 60,247,391		
2014	-	-	-	-	-	-	-	-	-	-	-	-
2015	-	(16,913,231)	-	-	-	-	-	-	-	-	(16,913,231)	(16,913,231)
2016	-	(16,913,231)	(11,349,740)	-	-	-	-	-	-	-	(28,262,971)	(28,262,971)
2017	-	(16,913,231)	(11,349,740)	(13,517,317)	-	-	-	-	-	-	(41,780,288)	(41,780,288)
2018	-	(15,451,927)	(11,349,740)	(13,517,317)	(12,143,398)	-	-	-	-	-	(52,462,382)	(52,462,382)
2019	-	-	(9,741,481)	(13,517,317)	(12,143,398)	(1,780,516)	-	-	-	-	(37,182,712)	(37,182,712)
2020	-	-	-	(13,517,317)	(12,143,398)	(1,780,516)	14,260,266	-	-	-	(13,180,965)	(13,180,965)
2021	-	-	-	(2,631,823)	(12,143,398)	(1,780,516)	14,260,266	630,834	-	-	(1,664,637)	(1,664,637)
2022	-	-	-	-	(639,956)	(1,702,708)	14,260,266	630,834	(7,406,444)	-	5,141,992	5,141,992
2023	-	-	-	-	-	-	12,780,049	630,834	(7,406,444)	16,681,173	22,685,612	22,685,612
2024	-	-	-	-	-	-	-	293,780	(7,406,444)	16,681,173	9,568,509	\$ 33,942,768
2025	-	-	-	-	-	-	-	-	(2,510,786)	16,681,173	14,170,387	14,170,387
2026	-	-	-	-	-	-	-	-	-	10,203,872	10,203,872	10,203,872
2027	-	-	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	-	-	-
Thereafter	\$ -	\$ (66,191,620)	\$ (43,790,701)	\$ (56,701,091)	\$ (49,213,548)	\$ (7,044,256)	\$ 55,560,847	\$ 2,186,282	\$ (24,730,118)	\$ 60,247,391	\$ (129,676,814)	

**Assumption changes - Net (inflows)/outflows of resources**

Recognition Period	4.0139	3.9136	3.8583	4.1947	4.0527	3.9563	3.8962	3.4657	3.3390	3.6117		
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total	
<b>Total</b>	\$ -	\$ -	\$ -	\$ 290,801,601	\$ -	\$ -	\$ -	\$ 173,419,980	\$ -	\$ -		
2014	-	-	-	-	-	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-	-	-	-	-	-
2017	-	-	-	69,325,959	-	-	-	-	-	-	69,325,959	69,325,959
2018	-	-	-	69,325,959	-	-	-	-	-	-	69,325,959	69,325,959
2019	-	-	-	69,325,959	-	-	-	-	-	-	69,325,959	69,325,959
2020	-	-	-	69,325,959	-	-	-	-	-	-	69,325,959	69,325,959
2021	-	-	-	13,497,765	-	-	-	50,038,947	-	-	63,536,712	63,536,712
2022	-	-	-	-	-	-	-	50,038,947	-	-	50,038,947	50,038,947
2023	-	-	-	-	-	-	-	50,038,947	-	-	50,038,947	50,038,947
2024	-	-	-	-	-	-	-	23,303,139	-	-	23,303,139	\$ 23,303,139
2025	-	-	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	-	-	-
Thereafter	\$ -	\$ -	\$ -	\$ 290,801,601	\$ -	\$ -	\$ -	\$ 173,419,980	\$ -	\$ -	\$ 464,221,581	



# History of Deferred Outflows and Inflows of Resources by Source

## Fiscal Year Ended December 31, 2023 (continued)

**Net Difference between projected and actual earnings on pension plan investments - Net (inflows)/outflows of resources**

Recognition Period	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	Deferred Net (Inflows)/Outflows at Measurement Date
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total	
<b>Total</b>	<b>\$ 180,861,863</b>	<b>\$ 577,381,461</b>	<b>\$ 35,536,046</b>	<b>\$ (464,917,747)</b>	<b>\$ 758,219,998</b>	<b>\$ (783,381,316)</b>	<b>\$ (270,952,701)</b>	<b>\$ (861,568,742)</b>	<b>\$ 1,271,550,349</b>	<b>\$ (555,729,319)</b>		
2014	36,172,373										36,172,373	
2015	36,172,373	115,476,292									151,648,665	
2016	36,172,373	115,476,292	7,107,209								158,755,874	
2017	36,172,373	115,476,292	7,107,209	(92,983,549)							65,772,325	
2018	36,172,371	115,476,292	7,107,209	(92,983,549)	151,644,000						217,416,323	
2019	-	115,476,293	7,107,209	(92,983,549)	151,644,000	(156,676,263)					24,567,690	
2020	-	-	7,107,210	(92,983,549)	151,644,000	(156,676,263)	(54,190,540)				(145,099,142)	
2021	-	-	-	(92,983,551)	151,644,000	(156,676,263)	(54,190,540)	(172,313,748)			(324,520,102)	
2022	-	-	-	-	151,643,998	(156,676,263)	(54,190,540)	(172,313,748)	254,310,070		22,773,517	
2023	-	-	-	-	-	(156,676,264)	(54,190,540)	(172,313,748)	254,310,070	(111,145,864)	(240,016,346)	
2024	-	-	-	-	-	-	(54,190,541)	(172,313,748)	254,310,070	(111,145,864)	(83,340,083)	\$ (80,471,285)
2025	-	-	-	-	-	-	-	(172,313,750)	254,310,070	(111,145,864)	(29,149,544)	
2026	-	-	-	-	-	-	-	-	254,310,069	(111,145,864)	143,164,205	
2027	-	-	-	-	-	-	-	-	-	(111,145,863)	(111,145,863)	
2028	-	-	-	-	-	-	-	-	-	-	-	
Thereafter	-	-	-	-	-	-	-	-	-	-	-	
	<b>\$ 180,861,863</b>	<b>\$ 577,381,461</b>	<b>\$ 35,536,046</b>	<b>\$ (464,917,747)</b>	<b>\$ 758,219,998</b>	<b>\$ (783,381,316)</b>	<b>\$ (270,952,701)</b>	<b>\$ (861,568,742)</b>	<b>\$ 1,271,550,349</b>	<b>\$ (555,729,319)</b>	<b>\$ (113,000,108)</b>	

**Total net differences from all sources - Net (inflows)/outflows of resources**

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
<b>Total</b>	<b>\$ 180,861,863</b>	<b>\$ 511,189,841</b>	<b>\$ (8,254,655)</b>	<b>\$ (230,817,237)</b>	<b>\$ 709,006,450</b>	<b>\$ (790,425,572)</b>	<b>\$ (215,391,854)</b>	<b>\$ (685,962,480)</b>	<b>\$ 1,246,820,231</b>	<b>\$ (495,481,928)</b>	
2014	36,172,373										36,172,373
2015	36,172,373	98,563,061									134,735,434
2016	36,172,373	98,563,061	(4,242,531)								130,492,903
2017	36,172,373	98,563,061	(4,242,531)	(37,174,907)							93,317,996
2018	36,172,371	100,024,365	(4,242,531)	(37,174,907)	139,500,602						234,279,900
2019	-	115,476,293	(2,634,272)	(37,174,907)	139,500,602	(158,456,779)					56,710,937
2020	-	-	7,107,210	(37,174,907)	139,500,602	(158,456,779)	(39,930,274)				(88,954,148)
2021	-	-	-	(82,117,609)	139,500,602	(158,456,779)	(39,930,274)	(121,643,967)			(262,648,027)
2022	-	-	-	-	151,004,042	(158,378,971)	(39,930,274)	(121,643,967)	246,903,626		77,954,456
2023	-	-	-	-	-	(156,676,264)	(41,410,491)	(121,643,967)	246,903,626	(94,464,691)	(167,291,787)
2024	-	-	-	-	-	-	(54,190,541)	(148,716,829)	246,903,626	(94,464,691)	(50,468,435)
2025	-	-	-	-	-	-	-	(172,313,750)	251,799,284	(94,464,691)	(14,979,157)
2026	-	-	-	-	-	-	-	-	254,310,069	(100,941,992)	153,368,077
2027	-	-	-	-	-	-	-	-	-	(111,145,863)	(111,145,863)
2028	-	-	-	-	-	-	-	-	-	-	-
Thereafter	-	-	-	-	-	-	-	-	-	-	-
	<b>\$ 180,861,863</b>	<b>\$ 511,189,841</b>	<b>\$ (8,254,655)</b>	<b>\$ (230,817,237)</b>	<b>\$ 709,006,450</b>	<b>\$ (790,425,572)</b>	<b>\$ (215,391,854)</b>	<b>\$ (685,962,480)</b>	<b>\$ 1,246,820,231</b>	<b>\$ (495,481,928)</b>	<b>\$ 221,544,659</b>



# Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods Fiscal Year Ended December 31, 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	\$ 80,131,003	\$ 7,406,444	\$ 72,724,559
2. Due to Assets	254,310,070	494,326,416	(240,016,346)
<b>3. Total</b>	<b>\$ 334,441,073</b>	<b>\$ 501,732,860</b>	<b>\$ (167,291,787)</b>

## 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	\$ 30,092,056	\$ 7,406,444	\$ 22,685,612
2. Assumption Changes	50,038,947	0	50,038,947
3. Net Difference between projected and actual earnings on pension plan investments	254,310,070	494,326,416	(240,016,346)
<b>4. Total</b>	<b>\$ 334,441,073</b>	<b>\$ 501,732,860</b>	<b>\$ (167,291,787)</b>

## 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	\$ 43,859,998	\$ 9,917,230	\$ 33,942,768
2. Assumption Changes	23,303,139	0	23,303,139
3. Net Difference between projected and actual earnings on pension plan investments	762,930,209	843,401,494	(80,471,285)
<b>4. Total</b>	<b>\$ 830,093,346</b>	<b>\$ 853,318,724</b>	<b>\$ (23,225,378)</b>

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

Year Ending December 31	Net Deferred Outflows of Resources
2024	\$ (50,468,435)
2025	(14,979,157)
2026	153,368,077
2027	(111,145,863)
2028	0
Thereafter	0
<b>Total</b>	<b>\$ (23,225,378)</b>





## Statement of Fiduciary Net Position as of December 31, 2023

	<b>2023</b>
<b>Assets</b>	
Cash and Deposits	\$ 353,834,025
Receivables	
Accounts Receivable - Sale of Investments	\$ 210,834,919
Accrued Interest and Other Dividends	17,984,266
Contributions	20,846,703
Accounts Receivable - Other	546,515,598
Total Receivables	\$ 796,181,486
Investments	
Fixed Income	\$ 1,443,206,680
Equities	4,290,522,287
Private Markets	1,179,578,555
Marketable Alternatives	1,714,740,063
Security Lending Collateral	257,524,077
Capital Assets, at Cost, Net of Accumulated Depreciation	3,398,907
Total Investments	\$ 8,888,970,569
<b>Total Assets</b>	<b>\$ 10,038,986,080</b>
<b>Liabilities</b>	
Payables	
Accounts Payable - Purchase of Investments	\$ 834,108,896
Accrued Expenses	13,241,567
Accounts Payable - Other	601,566
Total Liabilities	\$ 847,952,029
<b>Net Position Restricted for Pensions</b>	<b>\$ 9,191,034,051</b>



## Statement of Changes in Fiduciary Net Position for Year Ended December 31, 2023

	<b>2023</b>
<b>Additions</b>	
Contributions	
Employer	\$ 188,450,521
Employee	186,059,940
Other Employer Contributions	2,675,500
Other Employee Contributions	2,130,509
Total Contributions	\$ 379,316,470
Investment Income	
Net Appreciation in Fair Value of Investments	\$ 982,374,288
Interest and Dividends	201,401,272
Less Investment Expense	(67,494,997)
Net Investment Income	\$ 1,116,280,563
Other	\$ 0
<b>Total Additions</b>	<b>\$ 1,495,597,033</b>
 <b>Deductions</b>	
Benefit Payments, including Refunds of Employee Contributions	\$ 701,918,855
Pension Plan Administrative Expense	8,581,173
Other	653,550
<b>Total Deductions</b>	<b>\$ 711,153,578</b>
<b>Net Increase in Net Position</b>	<b>\$ 784,443,455</b>
 <b>Net Position Restricted for Pensions</b>	
Beginning of Year	\$ 8,406,590,596
End of Year	\$ 9,191,034,051

## SECTION C

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### **REQUIRED SUPPLEMENTARY INFORMATION**

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

# Schedule of Changes in Net Pension Liability and Related Ratios

## Current Reporting Period

### Fiscal Year Ended December 31, 2023

<b>A. Total pension liability</b>	
1. Service cost	\$ 218,085,360
2. Interest on the total pension liability	745,396,547
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the total pension liability	60,247,391
5. Changes of assumptions	0
6. Benefit payments, including refunds of employee contributions	(701,918,855)
<b>7. Net change in total pension liability</b>	<u>321,810,443</u>
<b>8. Total pension liability – beginning</b>	<u>11,139,404,858</u>
<b>9. Total pension liability – ending</b>	<u><u>\$ 11,461,215,301</u></u>
<b>B. Plan fiduciary net position</b>	
1. Contributions – employer	\$ 191,126,021
2. Contributions – employee	188,190,449
3. Net investment income	1,116,280,563
4. Benefit payments, including refunds of employee contributions	(701,918,855)
5. Pension plan administrative expense	(8,581,173)
6. Other	(653,550)
<b>7. Net change in plan fiduciary net position</b>	<u>784,443,455</u>
<b>8. Plan fiduciary net position – beginning</b>	<u>8,406,590,596</u>
<b>9. Plan fiduciary net position – ending</b>	<u><u>\$ 9,191,034,051</u></u>
<b>C. Net pension liability</b>	<u><u>\$ 2,270,181,250</u></u>
<b>D. Plan fiduciary net position as a percentage of the total pension liability</b>	80.19 %
<b>E. Covered-employee payroll</b>	\$ 1,878,317,543
<b>F. Net pension liability as a percentage of covered-employee payroll</b>	120.86 %



# Schedules of Required Supplementary Information

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

### Last 10 Fiscal Years (which may be built prospectively)

Fiscal year ending December 31,	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
<b>Total pension liability</b>										
Service cost	\$ 218,085,360	\$ 210,661,646	\$ 214,075,814	\$ 198,288,435	\$ 194,455,298	\$ 195,575,014	\$ 201,824,345	\$ 219,893,113	\$ 217,488,957	\$ 213,059,299
Interest on the total pension liability	745,396,547	724,623,380	709,100,401	699,015,173	676,902,286	658,459,157	641,429,003	664,368,366	638,943,600	614,848,444
Changes of benefit terms	0	0	0	0	0	0	0	0	0	0
Difference between expected and actual experience	60,247,391	(24,730,118)	2,186,282	55,560,847	(7,044,256)	(49,213,548)	(56,701,091)	(43,790,701)	(66,191,620)	0
Changes of assumptions	0	0	173,419,980	0	0	0	290,801,601	0	0	0
Benefit payments, including refunds of employee contributions	(701,918,855)	(685,738,197)	(651,795,973)	(625,747,935)	(600,487,685)	(566,027,667)	(535,492,257)	(501,610,080)	(469,954,814)	(436,096,614)
<b>Net change in total pension liability</b>	<b>321,810,443</b>	<b>224,816,711</b>	<b>446,986,504</b>	<b>327,116,520</b>	<b>263,825,643</b>	<b>238,792,956</b>	<b>541,861,601</b>	<b>338,860,698</b>	<b>320,286,123</b>	<b>391,811,130</b>
<b>Total pension liability - beginning</b>	<b>11,139,404,858</b>	<b>10,914,588,147</b>	<b>10,467,601,643</b>	<b>10,140,485,123</b>	<b>9,876,659,480</b>	<b>9,637,866,524</b>	<b>9,096,004,923</b>	<b>8,757,144,225</b>	<b>8,436,858,102</b>	<b>8,045,046,972</b>
<b>Total pension liability - ending (a)</b>	<b>\$ 11,461,215,301</b>	<b>\$ 11,139,404,858</b>	<b>\$ 10,914,588,147</b>	<b>\$ 10,467,601,643</b>	<b>\$ 10,140,485,123</b>	<b>\$ 9,876,659,480</b>	<b>\$ 9,637,866,524</b>	<b>\$ 9,096,004,923</b>	<b>\$ 8,757,144,225</b>	<b>\$ 8,436,858,102</b>
<b>Plan fiduciary net position</b>										
Employer contributions	\$ 191,126,021	\$ 178,277,910	\$ 170,676,891	\$ 165,984,825	\$ 157,385,096	\$ 147,632,510	\$ 148,746,669	\$ 151,488,715	\$ 144,622,373	\$ 127,929,930
Employee contributions	188,190,449	177,131,721	169,867,368	165,086,190	157,610,787	151,130,515	149,752,251	152,422,538	153,529,134	137,144,565
Pension plan net investment income	1,116,280,563	(644,372,637)	1,414,900,342	805,893,355	1,251,518,669	(252,571,153)	923,878,089	454,712,993	(67,155,642)	318,184,952
Benefit payments, including refunds of employee contributions	(701,918,855)	(685,738,197)	(651,795,973)	(625,747,935)	(600,487,685)	(566,027,667)	(535,492,257)	(501,610,080)	(469,954,814)	(436,096,614)
Pension plan administrative expense	(8,581,173)	(8,030,528)	(7,725,813)	(7,238,487)	(6,527,091)	(7,033,951)	(6,551,109)	(5,993,529)	(5,097,818)	(5,182,863)
Other	(653,550)	(544,320)	(298,065)	(294,893)	(309,531)	(287,669)	(312,336)	(312,336)	(312,704)	5,539,339
<b>Net change in plan fiduciary net position</b>	<b>784,443,455</b>	<b>(983,276,051)</b>	<b>1,095,624,750</b>	<b>503,683,055</b>	<b>959,190,245</b>	<b>(527,157,415)</b>	<b>680,021,307</b>	<b>250,708,301</b>	<b>(244,369,471)</b>	<b>147,519,309</b>
<b>Plan fiduciary net position - beginning</b>	<b>8,406,590,596</b>	<b>9,389,866,647</b>	<b>8,294,241,897</b>	<b>7,790,558,842</b>	<b>6,831,368,597</b>	<b>7,358,526,012</b>	<b>6,678,504,705</b>	<b>6,427,796,404</b>	<b>6,672,165,875</b>	<b>6,524,646,566</b>
<b>Plan fiduciary net position - ending (b)</b>	<b>\$ 9,191,034,051</b>	<b>\$ 8,406,590,596</b>	<b>\$ 9,389,866,647</b>	<b>\$ 8,294,241,897</b>	<b>\$ 7,790,558,842</b>	<b>\$ 6,831,368,597</b>	<b>\$ 7,358,526,012</b>	<b>\$ 6,678,504,705</b>	<b>\$ 6,427,796,404</b>	<b>\$ 6,672,165,875</b>
<b>Net pension liability - ending (a) - (b)</b>	<b>\$ 2,270,181,250</b>	<b>\$ 2,732,814,262</b>	<b>\$ 1,524,721,500</b>	<b>\$ 2,173,359,746</b>	<b>\$ 2,349,926,281</b>	<b>\$ 3,045,290,883</b>	<b>\$ 2,279,340,512</b>	<b>\$ 2,417,500,218</b>	<b>\$ 2,329,347,821</b>	<b>\$ 1,764,692,227</b>
<b>Plan fiduciary net position as a percentage of total pension liability</b>	80.19 %	75.47 %	86.03 %	79.24 %	76.83 %	69.17 %	76.35 %	73.42 %	73.40 %	79.08 %
<b>Covered-employee payroll</b>	\$ 1,878,317,543	\$ 1,805,532,589	\$ 1,819,927,957	\$ 1,780,467,331	\$ 1,738,212,750	\$ 1,741,354,609	\$ 1,776,377,586	\$ 1,782,905,215	\$ 1,744,073,882	\$ 1,709,412,443
<b>Projected valuation payroll</b>	\$ 1,925,275,481	\$ 1,850,670,904	\$ 1,865,426,156	\$ 1,824,979,015	\$ 1,781,668,069	\$ 1,784,888,475	\$ 1,820,787,026	\$ 1,858,678,687	\$ 1,818,197,022	\$ 1,782,062,471
<b>Net pension liability as a percentage of covered-employee payroll</b>	120.86 %	151.36 %	83.78 %	122.07 %	135.19 %	174.88 %	128.31 %	135.59 %	133.56 %	103.23 %

**Notes to Schedule:**

For 2023, 2022, 2021, 2020, 2019, 2018, 2017, 2016, and 2015, "Other" changes to Plan Fiduciary Net Position includes other funding sources and depreciation expenses.

For 2014, "Other" changes also may include member redeposits and member service purchase contributions.



## Schedules of Required Supplementary Information

### Schedule of Net Pension Liability Multiyear

FY Ending December 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	\$ 8,436,858,102	\$ 6,672,165,875	\$ 1,764,692,227	79.08 %	\$ 1,709,412,443	103.23 %
2015	8,757,144,225	6,427,796,404	2,329,347,821	73.40 %	1,744,073,882	133.56 %
2016	9,096,004,923	6,678,504,705	2,417,500,218	73.42 %	1,782,905,215	135.59 %
2017	9,637,866,524	7,358,526,012	2,279,340,512	76.35 %	1,776,377,586	128.31 %
2018	9,876,659,480	6,831,368,597	3,045,290,883	69.17 %	1,741,354,609	174.88 %
2019	10,140,485,123	7,790,558,842	2,349,926,281	76.83 %	1,738,212,750	135.19 %
2020	10,467,601,643	8,294,241,897	2,173,359,746	79.24 %	1,780,467,331	122.07 %
2021	10,914,588,147	9,389,866,647	1,524,721,500	86.03 %	1,819,927,957	83.78 %
2022	11,139,404,858	8,406,590,596	2,732,814,262	75.47 %	1,805,532,589	151.36 %
2023	11,461,215,301	9,191,034,051	2,270,181,250	80.19 %	1,878,317,543	120.86 %

\* Covered payroll is the amount in force as of the valuation date and likely differs from the actual payroll paid during the year.

## Schedule of Contributions Multiyear Last 10 Fiscal Years

FY Ending December 31,	Actuarially Determined Contribution	Actual Contribution*	Contribution Deficiency (Excess)	Covered Payroll**	Actual Contribution as a % of Covered Payroll
2014	\$ 183,086,430	\$ 129,627,747	\$ 53,458,683	\$ 1,709,412,443	7.58 %
2015	168,411,742	144,622,373	23,789,369	1,744,073,882	8.29 %
2016	174,211,753	151,488,715	22,723,038	1,782,905,215	8.50 %
2017	167,125,230	148,746,669	18,378,561	1,776,377,586	8.37 %
2018	191,677,662	147,632,510	44,045,152	1,741,354,609	8.48 %
2019	207,518,684	157,385,096	50,133,588	1,738,212,750	9.05 %
2020	219,815,919	165,984,825	53,831,094	1,780,467,331	9.32 %
2021	212,378,768	170,676,891	41,701,877	1,819,927,957	9.38 %
2022	210,236,215	178,277,910	31,958,305	1,805,532,589	9.87 %
2023	218,711,295	191,126,021	27,585,274	1,878,317,543	10.18 %

\* Includes other funding sources but excludes member redeposits and member service purchase contributions.

\*\* Covered payroll is the amount in force as of the valuation date and likely differs from the actual payroll paid during the year.



## Notes to Schedule of Contributions

**Valuation Date:** January 1, 2023  
**Notes** Actuarially determined contribution rates are calculated as of July 1 each year for implementation the following fiscal year.

### Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll, Closed
Remaining Amortization Period	24 years
Asset Valuation Method	5-Year smoothed market
Inflation	2.25%
Salary Increases	2.50% to 6.50% including inflation
Payroll Growth Rate	2.50%
Cost-of-Living Increase	0.00%
Investment Rate of Return	6.80%
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 of the period 2016 - 2020.
Post-Retirement Mortality	Pub-2010 General Healthy Annuitant Mortality Table, amount-weighted, fully generational, projected with the MP-2020 Ultimate Scale Males: No set back with a multiplier of 100% Females: No set back with a multiplier of 103%
Pre-Retirement Mortality	Pub-2010 General Employee Mortality Table, amount-weighted, fully generational, projected with the MP-2020 Ultimate Scale Males: No set back with a multiplier of 100% Females: No set back with a multiplier of 100%

### Other Information:

**Notes** There were no benefit changes during the year.

The employer is contributing at the rate of 9.37% of salary plus, effective March 5, 2015, an additional 1.00% for park rangers. Employees are contributing at the rate of 9.25% of salary.

The roll-forward methodology employed for purposes of the GASB disclosures is based on generally accepted actuarial methods.



## Schedule of Investment Returns Multiyear Last 10 Fiscal Years

<u>FY Ending December 31,</u>	<u>Annual Return<sup>1</sup></u>
2014	4.70 %
2015	(0.26)%
2016	7.60 %
2017	14.20 %
2018	(3.52)%
2019	18.72 %
2020	11.03 %
2021	17.19 %
2022	(6.99)%
2023	13.84 %

<sup>1</sup> Annual money-weighted rate of return, net of investment expenses.

## SECTION D

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### NOTES TO FINANCIAL STATEMENTS

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

## Single Discount Rate

A Single Discount Rate of 6.80% 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 6.80%. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the statutory contribution 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.

## Sensitivity of Results

Regarding the sensitivity of the net pension liability to changes in the Single Discount Rate, the following presents the plan's net pension liability, calculated using a Single Discount Rate of 6.80%, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

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

	Current Single Discount	
1% Decrease	Rate Assumption	1% Increase
5.80%	6.80%	7.80%
\$ 3,605,121,838	\$ 2,270,181,250	\$ 1,163,918,628

## Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	30,855
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	27,317
Active Plan Members	<u>34,712</u>
Total Plan Members	92,884

# SECTION E

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## SUMMARY OF BENEFITS

## Summary of Benefits

<b>Covered Members</b>	Any full-time or regular part-time employee of an employer as defined under W.S. 9-3-402(a)(vii)
<b>Tier</b>	Members who join the State of Wyoming Retirement System by August 31, 2012 are in Tier 1, while members who join on or after September 1, 2012 are in Tier 2.
<b>Final Average Salary</b>	For Tier 1 member: employee's average annual salary for the highest paid three continuous years of service. For Tier 2 member: employee's average annual salary for the highest paid five continuous years of service.
<b>Service Retirement</b>	
Eligibility	Tier 1 members may retire upon normal retirement on the date he/she attains age 60 with four or more years of service while Tier 2 members may retire upon normal retirement on the date he/she attains age 65 with four or more years of service. All employees may also retire upon normal retirement on the date that the sum of the member's age and service is at least 85. Tier 1 members are eligible for a reduced benefit at age 50 with four or more years of service and Tier 2 members are eligible for a reduced benefit at age 55 with four or more years of service. All members are eligible for a reduced benefit at any age with 25 or more years of service.
Monthly Benefit	For Tier 1 member: 2.125% of employee's Final Average Salary for each year of credited service for the first 15 years of service credit plus 2.25% of Final Average Salary for any years of service credit exceeding 15 years. For Tier 2 member: 2.000% of employee's Final (5-year) Average Salary for each year of credited service.  This amount is reduced by 5.00% per year that the employee is under age 60 for Tier 1 and under age 65 for Tier 2. However, members retiring with a combined age and service of at least 85 receive an unreduced benefit. Employees hired prior to July 1, 1981 may be entitled to benefits earned under a different formula.
Vesting	Any employee who has left employment with four or more years of service, and who has not withdrawn accumulated contributions, is eligible to receive the above benefit or can elect to receive a lump-sum refund of employee contributions with interest. An employee who terminates with less than four years of service is only eligible for the lump-sum benefit.



### Disability Benefit

Eligibility	Ten or more years of service.
Benefit	Service retirement benefit earned as of the date of disability, payable immediately.
Park Rangers	Effective March 5, 2015, for eligible peace officers as defined under W.S. 6-1-104(a)(vi)(P) whose disability is duty-related, the member shall be eligible immediately for a benefit of 62.5% of the member's final salary.

### Pre-retirement Death Benefit

Eligibility	No age or service requirements.
Benefit	A lump sum equal to two times the employee contributions with interest. If the employee is vested, the beneficiary can elect, in lieu of this lump sum, to receive a monthly annuity equal to the actuarial equivalent of the retirement benefit that would be due the employee.
Park Rangers	Effective March 5, 2015, for eligible peace officers as defined under W.S. 6-1-104(a)(vi)(P) whose death is duty-related, the member shall be eligible immediately for a benefit of 62.5% of member's final actual salary, payable to the surviving spouse plus 6% of the member's final actual salary for each unmarried child under age 18. Payment shall not exceed the member's final actual salary.

### Contributions

Employee	9.25% of salary
Employer	9.37% of salary plus an additional 1.00% for park rangers.

Interest 3.00% annually (0.00% for non-vested members).

**Cost-of-Living Improvements** W.S. 9-3-454 prohibits benefit changes, including cost-of-living increases, unless the funded ratio stays above 100% plus a margin for adverse experience throughout the life of the benefit change.



## Optional Forms of Payment

All options include the choice to elect a reduced benefit with a self-funded annual COLA of 1%, 2%, or 3% per year. COLAs commence on the July 1<sup>st</sup> following the two-year anniversary of retirement.

- |           |                                                                                                                                                                                                   |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Option 1  | Monthly benefit for life with a lump-sum death benefit equal to the excess (if any) of the employee contributions with interest over the total benefits received.                                 |
| Option 2  | Monthly benefit for life. Upon death, 100% of the benefit continues to be paid to the beneficiary.                                                                                                |
| Option 2P | Monthly benefit for life. Upon death, 100% of the benefit continues to be paid to the beneficiary. Benefit reverts to Option 1 amount but without the cash refund feature upon beneficiary death. |
| Option 3  | Monthly benefit for life. Upon death, 50% of the benefit continues to be paid to the beneficiary.                                                                                                 |
| Option 3P | Monthly benefit for life. Upon death, 50% of the benefit continues to be paid to the beneficiary. Benefit reverts to Option 1 amount but without the cash refund feature upon beneficiary death.  |
| Option 4a | Monthly benefit for life with a guarantee of 120 monthly payments                                                                                                                                 |
| Option 4b | Monthly benefit for life with a guarantee of 240 monthly payments                                                                                                                                 |
| Option 5  | The largest possible monthly benefit payable for life with no lump-sum death benefit.                                                                                                             |



## **SECTION F**

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

## Summary of Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2023 actuarial valuation for GASB reporting purposes and are based on assumptions adopted by the Board at the November 17, 2021 and the February 17, 2022 meetings.

1. Valuation Date

The valuation date for any given year is January 1<sup>st</sup>, the first day of each plan year. This is the date as of which the actuarial present value of future benefits and the actuarial value of assets are determined.

2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level percentage of payroll. Under this method, the employer contribution rate is the sum of (i) the employer normal cost rate, and (ii) the rate that will amortize the unfunded actuarial accrued liability (UAAL).

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 6.80%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations consider the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and an unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.
- d. The unfunded accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability. Amortization bases are established each year and amortized based on the Board's policy. The Board's policy consists of amortizing the unfunded liability as of January 1, 2018, over a closed 30-year period with each subsequent amortization base created as a result of year to year experience changes over individual 20-year closed periods. The current year amortization base is determined by taking the current unfunded liability less the outstanding amounts of prior year bases.



3. Actuarial Value of Assets

The actuarial value of assets is based on the market value of assets with a five-year phase-in of actual investment return in excess of (less than) expected investment income, with interest, dividends, and other income recognized immediately. Expected investment income is determined using the assumed investment return rate and the market value of assets (adjusted for receipts and disbursements during the year). The returns are computed net of administrative and investment expenses. An adjustment is made if the actuarial value is not within 20% of the Market Value. For any year following a year in which the 20% of market value adjustment was applied, the actuarial value is determined as if the adjustment was not applied in the previous year.

4. Economic Assumptions

a. Investment return

6.80% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.55% net real rate of return. This rate represents the assumed return, net of investment expenses.

b. Salary increase rate

Service	Rate
1	6.50%
2	6.50%
3	6.50%
4	6.00%
5	5.25%
6	4.75%
7	4.25%
8	4.00%
9	4.00%
10	3.50%
11	3.50%
12	3.50%
13	3.50%
14	3.25%
15	3.00%
16	3.00%
17	2.75%
18	2.75%
19	2.75%
20	2.75%
21+	2.50%

c. Payroll growth rate

In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 2.50% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

d. Cost-of-Living adjustment

No cost-of-living adjustment is assumed since the policy for providing the benefit requires Board approval to make the recommendation to the Joint Appropriations Committee and the funded level of the plan shows a cost-of-living requirement would not be permitted.

5. Demographic Assumptions

a. Mortality

Healthy Pre-Retirement Mortality:

Pub-2010 General Active Mortality Table, amount weighted, fully generational, projected with the MP-2020 Ultimate Scale

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

Pub-2010 General Healthy Annuitant Mortality Table, amount weighted, fully generational, projected with the MP-2020 Ultimate Scale

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 103%

Disabled Mortality

Pub-2010 General Disabled Retiree Mortality Table, amount weighted, fully generational, projected with the MP-2020 Ultimate Scale

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2023 using the MP-2020 Ultimate Scale					
	Male	Female	Male	Female	Male	Female
20	0.03%	0.01%	0.03%	0.01%	0.35%	0.20%
25	0.02%	0.01%	0.02%	0.01%	0.23%	0.14%
30	0.03%	0.01%	0.03%	0.01%	0.30%	0.22%
35	0.04%	0.02%	0.04%	0.02%	0.38%	0.34%
40	0.06%	0.03%	0.06%	0.03%	0.54%	0.53%
45	0.08%	0.05%	0.09%	0.06%	0.84%	0.83%
50	0.12%	0.07%	0.25%	0.19%	1.35%	1.24%
55	0.18%	0.10%	0.36%	0.25%	1.77%	1.46%
60	0.27%	0.16%	0.52%	0.33%	2.10%	1.64%
65	0.39%	0.25%	0.77%	0.53%	2.56%	1.90%
70	0.60%	0.42%	1.30%	0.93%	3.32%	2.43%
75			2.29%	1.66%	4.46%	3.44%
80			4.13%	3.00%	6.36%	5.20%
85			7.67%	5.70%	9.65%	8.33%
90			13.51%	10.90%	14.97%	12.59%
95			21.73%	18.41%	22.42%	18.32%
100			31.36%	27.89%	31.36%	27.08%

b. Disability

Age	Male	Female
20	0.01%	0.01%
25	0.01%	0.01%
30	0.01%	0.01%
35	0.01%	0.01%
40	0.01%	0.01%
45	0.02%	0.02%
50	0.12%	0.05%
55+	0.24%	0.12%

c. Withdrawal

Service	Male	Female
1-4	13.00%	14.00%
5	13.00%	13.00%
6	11.00%	11.00%
7	10.00%	10.00%
8	9.00%	9.00%
9	8.00%	8.00%
10	8.00%	8.00%
11	8.00%	8.00%
12	8.00%	7.00%
13	7.00%	7.00%
14	6.00%	7.00%
15	6.00%	6.00%
16	5.00%	6.00%
17	5.00%	6.00%
18	4.00%	6.00%
19+	3.00%	6.00%

d. Retirement Rates

Age	Retirement	
	Unreduced	Reduced
<50	15.00%	0.20%
50-54	15.00%	0.20%
55-59	17.00%	0.20%
60-61	13.00%	0.20%
62	18.00%	0.30%
63-64	15.00%	0.50%
65	30.00%	1.00%
66	35.00%	1.00%
67	28.00%	1.00%
68	25.00%	1.50%
69	25.00%	2.00%
70	25.00%	2.50%
71-73	20.00%	2.50%
74-79	15.00%	2.50%
80+	100.00%	100.00%

6. Other Assumptions

- a. Percent married: 85.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Percent electing deferred termination benefit: Vested terminating members are assumed to elect a refund or a deferred benefit. It is assumed that the active members will elect the maximum value of the refund of deferred benefit when they terminate.
- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is age 60 (65 for Tier 2).
- f. No benefit amount data is available for members entitled to deferred benefits. The benefit is estimated using the final average compensation and service provided by WRS.
- g. There will be no recoveries once disabled. We assume all members are totally disabled.
- h. No surviving spouse will remarry.

- i. Administrative expenses: Assumed to be the average of the prior two years, with each year projected at 2.50% to the valuation date.
- j. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- k. Decrement timing: Decrements of all types are assumed to occur mid-year.
- l. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- m. Decrement relativity: Decrement rates are converted to probabilities in order to account for multiple decrements.
- n. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- o. Benefit Service: All members are assumed to accrue one year of service each year. Exact fractional service is used to determine the amount of benefit payable.

## Experience Analysis

An experience study was conducted on behalf of all WRS' plans covering the five year period ending December 31, 2020. That study provided a detailed analysis concerning the development of the long term inflation rate, real rate of return and discount rate. The study also analyzed each major actuarial assumption (e.g. mortality, salary increases, retirement, termination and disability) and proposed assumptions consistent with the findings. For further information on the experience study and related assumption recommendation, the reader is directed to request the December 31, 2020 Wyoming Retirement System Experience Study.



## **SECTION G**

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### **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 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 (which is published by the Federal Reserve) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 6.80%; the municipal bond rate is 3.77%; and the resulting Single Discount Rate is 6.80%.

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 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.

The projections in this report are strictly for the purpose of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

# Single Discount Rate Development Projection of Contributions Ending December 31 for 2023 to 2072

Year	Projected Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Contributions from Current Employees	Employer Contributions for Current Employees	Employer Contributions Related to Payroll of Future Employees	Total Contributions
	(a)	(b)=max(0,(c)-(a))	(c)	(d)	(e)=(a)*ER%	(f) = (b)*netER%	(g)=(d)+(e)+(f)
2023	\$ 1,878,317,543	\$ 46,957,939	\$ 1,925,275,481	\$ 188,190,449	\$ 186,788,730	\$ 3,792,300	\$ 378,771,479
2024	1,861,602,047	111,805,321	1,973,407,368	172,198,189	174,432,112	9,029,343	355,659,644
2025	1,748,307,249	274,435,303	2,022,742,552	161,718,420	163,816,389	22,167,014	347,701,823
2026	1,645,186,611	428,124,505	2,073,311,116	152,179,762	154,153,985	34,585,496	340,919,243
2027	1,550,480,504	574,663,390	2,125,143,894	143,419,447	145,280,023	46,391,523	335,090,993
2028	1,463,888,965	714,383,526	2,178,272,491	135,409,729	137,166,396	57,581,493	330,157,618
2029	1,383,971,577	848,757,726	2,232,729,303	128,017,371	129,678,137	68,297,792	325,993,300
2030	1,308,725,633	979,821,903	2,288,547,536	121,057,121	122,627,592	78,727,296	322,412,009
2031	1,236,987,043	1,108,774,181	2,345,761,224	114,421,301	115,905,686	88,988,929	319,315,916
2032	1,167,670,544	1,236,734,711	2,404,405,255	108,009,525	109,410,730	99,190,036	316,610,291
2033	1,100,158,376	1,364,357,010	2,464,515,386	101,764,650	103,084,840	109,391,781	314,241,271
2034	1,033,462,892	1,492,665,379	2,526,128,271	95,595,318	96,835,473	119,682,740	312,113,531
2035	967,259,514	1,622,021,964	2,589,281,478	89,471,505	90,632,216	130,104,980	310,208,701
2036	901,833,584	1,752,179,931	2,654,013,515	83,419,606	84,501,807	140,650,715	308,572,128
2037	837,181,660	1,883,182,193	2,720,363,853	77,439,304	78,443,922	151,329,757	307,212,983
2038	774,149,805	2,014,223,144	2,788,372,949	71,608,857	72,537,837	162,082,200	306,228,894
2039	713,287,073	2,144,795,200	2,858,082,273	65,979,054	66,834,999	172,867,029	305,681,082
2040	654,505,560	2,275,028,770	2,929,534,330	60,541,764	61,327,171	183,690,355	305,559,290
2041	597,861,172	2,404,911,516	3,002,772,688	55,302,158	56,019,592	194,546,489	305,868,239
2042	543,534,693	2,534,307,312	3,077,842,005	50,276,959	50,929,201	205,419,979	306,626,139
2043	491,476,427	2,663,311,628	3,154,788,055	45,461,569	46,051,341	216,312,338	307,825,248
2044	441,887,882	2,791,769,874	3,233,657,756	40,874,629	41,404,895	227,205,504	309,485,028
2045	395,193,338	2,919,305,862	3,314,499,200	36,555,384	37,029,616	238,063,577	311,648,577
2046	351,514,091	3,045,847,589	3,397,361,680	32,515,053	32,936,870	248,874,523	314,326,446
2047	311,164,714	3,171,131,008	3,482,295,722	28,782,736	29,156,134	259,609,426	317,548,296
2048	274,467,736	3,294,885,379	3,569,353,115	25,388,266	25,717,627	270,245,465	321,351,358
2049	240,924,672	3,417,662,271	3,658,586,943	22,285,532	22,574,642	280,825,843	325,686,017
2050	209,817,318	3,540,234,299	3,750,051,617	19,408,102	19,659,883	291,403,996	330,471,981
2051	181,106,402	3,662,696,505	3,843,802,907	16,752,342	16,969,670	301,978,218	335,700,230
2052	154,964,808	3,784,933,172	3,939,897,980	14,334,245	14,520,202	312,529,670	341,384,117
2053	131,352,328	3,907,043,102	4,038,395,430	12,150,090	12,307,713	323,055,107	347,512,910
2054	110,156,476	4,029,198,840	4,139,355,316	10,189,474	10,321,662	333,556,344	354,067,480
2055	91,513,251	4,151,325,948	4,242,839,199	8,464,976	8,574,792	344,019,152	361,058,920
2056	75,378,656	4,273,531,523	4,348,910,179	6,972,526	7,062,980	354,451,522	368,487,028
2057	61,671,807	4,395,961,126	4,457,632,933	5,704,642	5,778,648	364,869,187	376,352,477
2058	50,246,935	4,518,826,821	4,569,073,756	4,647,842	4,708,138	375,293,697	384,649,677
2059	40,755,514	4,642,545,086	4,683,300,600	3,769,885	3,818,792	385,763,456	393,352,133
2060	32,876,491	4,767,506,624	4,800,383,115	3,041,075	3,080,527	396,313,791	402,435,393
2061	26,331,522	4,894,061,171	4,920,392,693	2,435,666	2,467,264	406,976,281	411,879,211
2062	20,941,396	5,022,461,114	5,043,402,510	1,937,079	1,962,209	417,774,020	421,673,308
2063	16,527,873	5,152,959,700	5,169,487,573	1,528,828	1,548,662	428,729,218	431,806,708
2064	12,911,845	5,285,812,917	5,298,724,762	1,194,346	1,209,840	439,864,482	442,268,668
2065	9,981,283	5,421,211,598	5,431,192,881	923,269	935,246	451,197,021	453,055,536
2066	7,662,711	5,559,309,992	5,566,972,703	708,801	717,996	462,741,088	464,167,885
2067	5,872,198	5,700,274,823	5,706,147,021	543,178	550,225	474,512,397	475,605,800
2068	4,490,465	5,844,310,232	5,848,800,697	415,368	420,757	486,530,084	487,366,209
2069	3,421,647	5,991,599,067	5,995,020,714	316,502	320,608	498,810,959	499,448,069
2070	2,603,060	6,142,293,172	6,144,896,232	240,783	243,907	511,369,069	511,853,759
2071	1,980,489	6,296,538,149	6,298,518,638	183,195	185,572	524,217,707	524,586,474
2072	1,507,344	6,454,474,260	6,455,981,604	139,429	141,238	537,369,538	537,650,205



# Single Discount Rate Development Projection of Contributions Ending December 31 for 2073 to 2122 (concluded)

Year	Projected Payroll for		Total Employee Payroll	Contributions from Current Employees	Employer Contributions		Total Contributions
	Current Employees	Payroll for Future Employees			Contributions for Current Employees	Related to Payroll of Future Employees	
	(a)	(b)=max(0,(c)-(a))	(c)	(d)	(e)=(a)*ER%	(f) = (b)*netER%	(g)=(d)+(e)+(f)
2073	\$ 1,150,308	\$ 6,616,230,836	\$ 6,617,381,144	\$ 106,403	\$ 107,784	\$ 550,836,186	\$ 551,050,373
2074	867,182	6,781,948,491	6,782,815,673	80,214	81,255	564,630,078	\$ 564,791,547
2075	644,180	6,951,741,885	6,952,386,065	59,587	60,360	578,761,443	578,881,390
2076	472,112	7,125,723,605	7,126,195,717	43,670	44,237	593,240,225	593,328,132
2077	337,198	7,304,013,412	7,304,350,610	31,191	31,595	608,076,917	608,139,703
2078	231,348	7,486,728,027	7,486,959,375	21,400	21,677	623,281,655	623,324,732
2079	149,489	7,673,983,870	7,674,133,359	13,828	14,007	638,864,491	638,892,326
2080	91,175	7,865,895,518	7,865,986,693	8,434	8,543	654,835,267	654,852,244
2081	53,796	8,062,582,564	8,062,636,360	4,976	5,041	671,204,173	671,214,190
2082	30,536	8,264,171,733	8,264,202,269	2,825	2,861	687,981,948	687,987,634
2083	16,358	8,470,790,968	8,470,807,326	1,513	1,533	705,179,382	705,182,428
2084	6,855	8,682,570,654	8,682,577,509	634	642	722,807,309	722,808,585
2085	1,689	8,899,640,258	8,899,641,947	156	158	740,876,454	740,876,768
2086	132	9,122,132,864	9,122,132,996	12	12	759,397,813	759,397,837
2087	0	9,350,186,321	9,350,186,321	0	0	778,382,778	778,382,778
2088	0	9,583,940,979	9,583,940,979	0	0	797,842,957	797,842,957
2089	0	9,823,539,503	9,823,539,503	0	0	817,790,153	817,790,153
2090	0	10,069,127,991	10,069,127,991	0	0	838,236,448	838,236,448
2091	0	10,320,856,191	10,320,856,191	0	0	859,194,220	859,194,220
2092	0	10,578,877,596	10,578,877,596	0	0	880,676,157	880,676,157
2093	0	10,843,349,536	10,843,349,536	0	0	902,695,271	902,695,271
2094	0	11,114,433,274	11,114,433,274	0	0	925,264,901	925,264,901
2095	0	11,392,294,106	11,392,294,106	0	0	948,398,729	948,398,729
2096	0	11,677,101,459	11,677,101,459	0	0	972,110,792	972,110,792
2097	0	11,969,028,995	11,969,028,995	0	0	996,415,492	996,415,492
2098	0	12,268,254,720	12,268,254,720	0	0	1,021,327,608	1,021,327,608
2099	0	12,574,961,088	12,574,961,088	0	0	1,046,862,301	1,046,862,301
2100	0	12,889,335,115	12,889,335,115	0	0	1,073,035,120	1,073,035,120
2101	0	13,211,568,493	13,211,568,493	0	0	1,099,862,016	1,099,862,016
2102	0	13,541,857,705	13,541,857,705	0	0	1,127,359,343	1,127,359,343
2103	0	13,880,404,148	13,880,404,148	0	0	1,155,543,872	1,155,543,872
2104	0	14,227,414,252	14,227,414,252	0	0	1,184,432,796	1,184,432,796
2105	0	14,583,099,608	14,583,099,608	0	0	1,214,043,742	1,214,043,742
2106	0	14,947,677,098	14,947,677,098	0	0	1,244,394,784	1,244,394,784
2107	0	15,321,369,025	15,321,369,025	0	0	1,275,504,447	1,275,504,447
2108	0	15,704,403,251	15,704,403,251	0	0	1,307,391,724	1,307,391,724
2109	0	16,097,013,332	16,097,013,332	0	0	1,340,076,083	1,340,076,083
2110	0	16,499,438,665	16,499,438,665	0	0	1,373,577,479	1,373,577,479
2111	0	16,911,924,632	16,911,924,632	0	0	1,407,916,365	1,407,916,365
2112	0	17,334,722,748	17,334,722,748	0	0	1,443,113,704	1,443,113,704
2113	0	17,768,090,817	17,768,090,817	0	0	1,479,190,980	1,479,190,980
2114	0	18,212,293,087	18,212,293,087	0	0	1,516,170,209	1,516,170,209
2115	0	18,667,600,414	18,667,600,414	0	0	1,554,073,956	1,554,073,956
2116	0	19,134,290,424	19,134,290,424	0	0	1,592,925,345	1,592,925,345
2117	0	19,612,647,685	19,612,647,685	0	0	1,632,748,075	1,632,748,075
2118	0	20,102,963,877	20,102,963,877	0	0	1,673,566,433	1,673,566,433
2119	0	20,605,537,974	20,605,537,974	0	0	1,715,405,314	1,715,405,314
2120	0	21,120,676,423	21,120,676,423	0	0	1,758,290,229	1,758,290,229
2121	0	21,648,693,334	21,648,693,334	0	0	1,802,247,328	1,802,247,328
2122	0	22,189,910,667	22,189,910,667	0	0	1,847,303,412	1,847,303,412



# Single Discount Rate Development

## Projection of Plan Net Position

### Ending December 31 for 2023 to 2072

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 6.800%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2023	\$ 8,406,590,596	\$ 379,316,470	\$ 701,918,855	\$ 9,234,723	\$ 1,116,280,563	\$ 9,191,034,051
2024	9,191,034,051	355,659,644	725,316,563	8,288,311	612,351,504	9,425,440,325
2025	9,425,440,325	347,701,823	743,139,451	8,495,519	627,422,072	9,648,929,250
2026	9,648,929,250	340,919,243	758,721,254	8,707,907	641,864,333	9,864,283,664
2027	9,864,283,664	335,090,993	779,762,088	8,925,604	655,602,628	10,066,289,594
2028	10,066,289,594	330,157,618	800,074,138	9,148,744	668,487,341	10,255,711,670
2029	10,255,711,670	325,993,300	820,712,363	9,377,463	680,530,975	10,432,146,120
2030	10,432,146,120	322,412,009	841,071,219	9,611,900	691,720,099	10,595,595,108
2031	10,595,595,108	319,315,916	860,900,981	9,852,197	702,059,934	10,746,217,781
2032	10,746,217,781	316,610,291	879,813,901	10,098,502	711,571,096	10,884,486,765
2033	10,884,486,765	314,241,271	898,264,310	10,350,965	720,268,725	11,010,381,486
2034	11,010,381,486	312,113,531	917,000,134	10,609,739	728,123,217	11,123,008,361
2035	11,123,008,361	310,208,701	935,582,423	10,874,982	735,087,868	11,221,847,525
2036	11,221,847,525	308,572,128	953,567,333	11,146,857	741,143,680	11,306,849,143
2037	11,306,849,143	307,212,983	970,828,259	11,425,528	746,291,800	11,378,100,140
2038	11,378,100,140	306,228,894	986,715,825	11,711,166	750,563,114	11,436,465,157
2039	11,436,465,157	305,681,082	1,001,262,268	12,003,946	754,017,379	11,482,897,405
2040	11,482,897,405	305,559,290	1,014,447,229	12,304,044	756,719,747	11,518,425,169
2041	11,518,425,169	305,868,239	1,025,527,742	12,611,645	758,765,138	11,544,919,159
2042	11,544,919,159	306,626,139	1,034,731,839	12,926,936	760,273,738	11,564,160,262
2043	11,564,160,262	307,825,248	1,041,678,660	13,250,110	761,379,118	11,578,435,857
2044	11,578,435,857	309,485,028	1,046,382,647	13,581,363	762,236,980	11,590,193,856
2045	11,590,193,856	311,648,577	1,048,814,594	13,920,897	763,016,194	11,602,123,135
2046	11,602,123,135	314,326,446	1,048,366,777	14,268,919	763,920,272	11,617,734,157
2047	11,617,734,157	317,548,296	1,045,376,993	14,625,642	765,177,615	11,640,457,433
2048	11,640,457,433	321,351,358	1,040,012,927	14,991,283	767,017,127	11,673,821,708
2049	11,673,821,708	325,686,017	1,032,412,296	15,366,065	769,672,491	11,721,401,855
2050	11,721,401,855	330,471,981	1,022,561,281	15,750,217	773,384,568	11,786,946,907
2051	11,786,946,907	335,700,230	1,010,278,977	16,143,972	778,414,032	11,874,638,219
2052	11,874,638,219	341,384,117	996,275,296	16,547,572	785,021,913	11,988,221,382
2053	11,988,221,382	347,512,910	981,328,402	16,961,261	793,436,523	12,130,881,152
2054	12,130,881,152	354,067,480	965,306,277	17,385,292	803,878,192	12,306,135,255
2055	12,306,135,255	361,058,920	948,535,557	17,819,925	816,575,563	12,517,414,256
2056	12,517,414,256	368,487,028	930,528,452	18,265,423	831,778,212	12,768,885,621
2057	12,768,885,621	376,352,477	910,871,369	18,722,058	849,783,372	13,065,428,044
2058	13,065,428,044	384,649,677	890,383,852	19,190,110	870,895,190	13,411,398,949
2059	13,411,398,949	393,352,133	868,780,611	19,669,863	895,418,617	13,811,719,225
2060	13,811,719,225	402,435,393	845,809,578	20,161,609	923,695,874	14,271,879,305
2061	14,271,879,305	411,879,211	821,693,822	20,665,649	956,092,165	14,797,491,210
2062	14,797,491,210	421,673,308	796,584,953	21,182,291	992,983,683	15,394,380,957
2063	15,394,380,957	431,806,708	770,514,134	21,711,848	1,034,765,176	16,068,726,859
2064	16,068,726,859	442,268,668	742,733,921	22,254,644	1,081,881,397	16,827,888,359
2065	16,827,888,359	453,055,536	712,968,264	22,811,010	1,134,841,885	17,680,006,506
2066	17,680,006,506	464,167,885	681,736,979	23,381,285	1,194,182,856	18,633,238,982
2067	18,633,238,982	475,605,800	649,596,984	23,965,817	1,260,440,400	19,695,722,381
2068	19,695,722,381	487,366,209	617,157,052	24,564,963	1,334,147,332	20,875,513,906
2069	20,875,513,906	499,448,069	584,362,289	25,179,087	1,415,853,331	22,181,273,931
2070	22,181,273,931	511,853,759	551,196,845	25,808,564	1,506,147,900	23,622,270,182
2071	23,622,270,182	524,586,474	518,177,920	26,453,778	1,605,644,043	25,207,869,001
2072	25,207,869,001	537,650,205	485,681,475	27,115,123	1,714,966,218	26,947,688,826



# Single Discount Rate Development

## Projection of Plan Net Position

### Ending December 31 for 2073 to 2122 (concluded)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 6.800%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2073	\$ 26,947,688,826	\$ 551,050,373	\$ 453,850,796	\$ 27,793,001	\$ 1,834,763,855	\$ 28,851,859,257
2074	28,851,859,257	564,791,547	422,764,955	28,487,826	1,965,723,263	30,931,121,286
2075	30,931,121,286	578,881,390	392,500,804	29,200,021	2,108,572,500	33,196,874,351
2076	33,196,874,351	593,328,132	363,140,628	29,930,022	2,264,084,237	35,661,216,070
2077	35,661,216,070	608,139,703	334,756,234	30,678,273	2,433,078,962	38,337,000,228
2078	38,337,000,228	623,324,732	307,414,217	31,445,229	2,616,428,778	41,237,894,292
2079	41,237,894,292	638,892,326	281,170,575	32,231,360	2,815,061,489	44,378,446,171
2080	44,378,446,171	654,852,244	256,076,628	33,037,144	3,029,964,947	47,774,149,590
2081	47,774,149,590	671,214,190	232,181,357	33,863,073	3,262,191,395	51,441,510,745
2082	51,441,510,745	687,987,634	209,523,437	34,709,650	3,512,862,262	55,398,127,554
2083	55,398,127,554	705,182,428	188,131,533	35,577,391	3,783,173,559	59,662,774,618
2084	59,662,774,618	722,808,585	168,021,761	36,466,826	4,074,401,738	64,255,496,353
2085	64,255,496,353	740,876,768	149,202,603	37,378,496	4,387,909,873	69,197,701,895
2086	69,197,701,895	759,397,837	131,677,028	38,312,959	4,725,154,031	74,512,263,777
2087	74,512,263,777	778,382,778	115,441,246	39,270,783	5,087,690,020	80,223,624,546
2088	80,223,624,546	797,842,957	100,484,332	40,252,552	5,477,180,658	86,357,911,276
2089	86,357,911,276	817,790,153	86,789,800	41,258,866	5,895,403,512	92,943,056,275
2090	92,943,056,275	838,236,448	74,336,286	42,290,338	6,344,259,076	100,008,925,174
2091	100,008,925,174	859,194,220	63,096,319	43,347,596	6,825,779,525	107,587,455,005
2092	107,587,455,005	880,676,157	53,035,986	44,431,286	7,342,138,115	115,712,802,004
2093	115,712,802,004	902,695,271	44,114,437	45,542,068	7,895,659,247	124,421,500,018
2094	124,421,500,018	925,264,901	36,283,484	46,680,620	8,488,829,260	133,752,630,075
2095	133,752,630,075	948,398,729	29,486,878	47,847,635	9,124,307,977	143,748,002,268
2096	143,748,002,268	972,110,792	23,659,060	49,043,826	9,804,941,123	154,452,351,298
2097	154,452,351,298	996,415,492	18,726,169	50,269,922	10,533,773,586	165,913,544,284
2098	165,913,544,284	1,021,327,608	14,608,265	51,526,670	11,314,063,471	178,182,800,428
2099	178,182,800,428	1,046,862,301	11,221,556	52,814,837	12,149,296,967	191,314,923,302
2100	191,314,923,302	1,073,035,120	8,480,583	54,135,207	13,043,204,071	205,368,546,703
2101	205,368,546,703	1,099,862,016	6,299,747	55,488,588	13,999,775,247	220,406,395,631
2102	220,406,395,631	1,127,359,343	4,595,367	56,875,802	15,023,279,114	236,495,562,920
2103	236,495,562,920	1,155,543,872	3,288,257	58,297,697	16,118,281,166	253,707,802,004
2104	253,707,802,004	1,184,432,796	2,305,677	59,755,140	17,289,663,614	272,119,837,598
2105	272,119,837,598	1,214,043,742	1,582,541	61,249,018	18,542,646,476	291,813,696,257
2106	291,813,696,257	1,244,394,784	1,062,125	62,780,244	19,882,810,027	312,877,058,699
2107	312,877,058,699	1,275,504,447	696,313	64,349,750	21,316,118,754	335,403,635,837
2108	335,403,635,837	1,307,391,724	445,442	65,958,494	22,848,946,929	359,493,570,554
2109	359,493,570,554	1,340,076,083	277,780	67,607,456	24,488,105,947	385,253,867,348
2110	385,253,867,348	1,373,577,479	168,709	69,297,642	26,240,873,570	412,798,852,047
2111	412,798,852,047	1,407,916,365	99,717	71,030,083	28,115,025,224	442,250,663,836
2112	442,250,663,836	1,443,113,704	57,328	72,805,836	30,118,867,490	473,739,781,866
2113	473,739,781,866	1,479,190,980	32,045	74,625,981	32,261,273,949	507,405,588,769
2114	507,405,588,769	1,516,170,209	17,419	76,491,631	34,551,723,536	543,396,973,464
2115	543,396,973,464	1,554,073,956	9,215	78,403,922	37,000,341,554	581,872,975,838
2116	581,872,975,838	1,592,925,345	4,749	80,364,020	39,617,943,542	623,003,475,955
2117	623,003,475,955	1,632,748,075	2,387	82,373,120	42,416,082,149	666,969,930,672
2118	666,969,930,672	1,673,566,433	1,168	84,432,448	45,407,097,245	713,966,160,734
2119	713,966,160,734	1,715,405,314	555	86,543,259	48,604,169,451	764,199,191,685
2120	764,199,191,685	1,758,290,229	255	88,706,841	52,021,377,321	817,890,152,140
2121	817,890,152,140	1,802,247,328	113	90,924,512	55,673,758,439	875,275,233,282
2122	875,275,233,282	1,847,303,412	66	93,197,625	59,577,374,658	936,606,713,660



# Single Discount Rate Development

## Present Values of Projected Benefits

### Ending December 31 for 2023 to 2072

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected 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 All Benefit Payments using Single Discount Rate (SDR)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v^(a)-.5	(g)=(e)*vf^(a)-.5	(h)=[(c)/(1+SDR)^(a)-.5]
2023	\$ 8,406,590,596	\$ 701,918,855	\$ 701,918,855	\$ 0	\$ 679,205,638	\$ 0	\$ 679,205,638
2024	9,191,034,051	725,316,563	725,316,563	0	657,159,387	0	657,159,387
2025	9,425,440,325	743,139,451	743,139,451	0	630,437,714	0	630,437,714
2026	9,648,929,250	758,721,254	758,721,254	0	602,674,569	0	602,674,569
2027	9,864,283,664	779,762,088	779,762,088	0	579,951,236	0	579,951,236
2028	10,066,289,594	800,074,138	800,074,138	0	557,170,793	0	557,170,793
2029	10,255,711,670	820,712,363	820,712,363	0	535,152,838	0	535,152,838
2030	10,432,146,120	841,071,219	841,071,219	0	513,509,375	0	513,509,375
2031	10,595,595,108	860,900,981	860,900,981	0	492,150,074	0	492,150,074
2032	10,746,217,781	879,813,901	879,813,901	0	470,938,199	0	470,938,199
2033	10,884,486,765	898,264,310	898,264,310	0	450,200,519	0	450,200,519
2034	11,010,381,486	917,000,134	917,000,134	0	430,328,385	0	430,328,385
2035	11,123,008,361	935,582,423	935,582,423	0	411,094,243	0	411,094,243
2036	11,221,847,525	953,567,333	953,567,333	0	392,319,101	0	392,319,101
2037	11,306,849,143	970,828,259	970,828,259	0	373,989,359	0	373,989,359
2038	11,378,100,140	986,715,825	986,715,825	0	355,907,940	0	355,907,940
2039	11,436,465,157	1,001,262,268	1,001,262,268	0	338,159,958	0	338,159,958
2040	11,482,897,405	1,014,447,229	1,014,447,229	0	320,798,654	0	320,798,654
2041	11,518,425,169	1,025,527,742	1,025,527,742	0	303,654,162	0	303,654,162
2042	11,544,919,159	1,034,731,839	1,034,731,839	0	286,872,148	0	286,872,148
2043	11,564,160,262	1,041,678,660	1,041,678,660	0	270,410,211	0	270,410,211
2044	11,578,435,857	1,046,382,647	1,046,382,647	0	254,336,444	0	254,336,444
2045	11,590,193,856	1,048,814,594	1,048,814,594	0	238,696,217	0	238,696,217
2046	11,602,123,135	1,048,366,777	1,048,366,777	0	223,402,903	0	223,402,903
2047	11,617,734,157	1,045,376,993	1,045,376,993	0	208,582,201	0	208,582,201
2048	11,640,457,433	1,040,012,927	1,040,012,927	0	194,299,550	0	194,299,550
2049	11,673,821,708	1,032,412,296	1,032,412,296	0	180,598,846	0	180,598,846
2050	11,721,401,855	1,022,561,281	1,022,561,281	0	167,486,534	0	167,486,534
2051	11,786,946,907	1,010,278,977	1,010,278,977	0	154,938,952	0	154,938,952
2052	11,874,638,219	996,275,296	996,275,296	0	143,063,026	0	143,063,026
2053	11,988,221,382	981,328,402	981,328,402	0	131,944,460	0	131,944,460
2054	12,130,881,152	965,306,277	965,306,277	0	121,526,411	0	121,526,411
2055	12,306,135,255	948,535,557	948,535,557	0	111,811,868	0	111,811,868
2056	12,517,414,256	930,528,452	930,528,452	0	102,705,261	0	102,705,261
2057	12,768,885,621	910,871,369	910,871,369	0	94,134,503	0	94,134,503
2058	13,065,428,044	890,383,852	890,383,852	0	86,158,436	0	86,158,436
2059	13,411,398,949	868,780,611	868,780,611	0	78,715,344	0	78,715,344
2060	13,811,719,225	845,809,578	845,809,578	0	71,754,745	0	71,754,745
2061	14,271,879,305	821,693,822	821,693,822	0	65,270,478	0	65,270,478
2062	14,797,491,210	796,584,953	796,584,953	0	59,247,171	0	59,247,171
2063	15,394,380,957	770,514,134	770,514,134	0	53,659,284	0	53,659,284
2064	16,068,726,859	742,733,921	742,733,921	0	48,431,316	0	48,431,316
2065	16,827,888,359	712,968,264	712,968,264	0	43,530,330	0	43,530,330
2066	17,680,006,506	681,736,979	681,736,979	0	38,973,316	0	38,973,316
2067	18,633,238,982	649,596,984	649,596,984	0	34,771,486	0	34,771,486
2068	19,695,722,381	617,157,052	617,157,052	0	30,931,694	0	30,931,694
2069	20,875,513,906	584,362,289	584,362,289	0	27,423,251	0	27,423,251
2070	22,181,273,931	551,196,845	551,196,845	0	24,219,893	0	24,219,893
2071	23,622,270,182	518,177,920	518,177,920	0	21,319,310	0	21,319,310
2072	25,207,869,001	485,681,475	485,681,475	0	18,710,032	0	18,710,032



# Single Discount Rate Development

## Present Values of Projected Benefits

### Ending December 31 for 2073 to 2122 (concluded)

Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Projected Benefit Payments	Unfunded Portion of Projected 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 All Benefit Payments using Single Discount Rate (SDR)
(a)	(b)	(c)	(d)	(e)	(f)=(d)*v <sup>(a)-5</sup>	(g)=(e)*vf <sup>(a)-5</sup>	(h)=[(c)/(1+SDR) <sup>(a)-5</sup>
2073	\$ 26,947,688,826	\$ 453,850,796	\$ 453,850,796	\$ 0	\$ 16,370,609	\$ 0	\$ 16,370,609
2074	28,851,859,257	422,764,955	422,764,955	0	14,278,397	0	14,278,397
2075	30,931,121,286	392,500,804	392,500,804	0	12,412,229	0	12,412,229
2076	33,196,874,351	363,140,628	363,140,628	0	10,752,583	0	10,752,583
2077	35,661,216,070	334,756,234	334,756,234	0	9,281,013	0	9,281,013
2078	38,337,000,228	307,414,217	307,414,217	0	7,980,304	0	7,980,304
2079	41,237,894,292	281,170,575	281,170,575	0	6,834,301	0	6,834,301
2080	44,378,446,171	256,076,628	256,076,628	0	5,828,045	0	5,828,045
2081	47,774,149,590	232,181,357	232,181,357	0	4,947,765	0	4,947,765
2082	51,441,510,745	209,523,437	209,523,437	0	4,180,643	0	4,180,643
2083	55,398,127,554	188,131,533	188,131,533	0	3,514,802	0	3,514,802
2084	59,662,774,618	168,021,761	168,021,761	0	2,939,229	0	2,939,229
2085	64,255,496,353	149,202,603	149,202,603	0	2,443,842	0	2,443,842
2086	69,197,701,895	131,677,028	131,677,028	0	2,019,461	0	2,019,461
2087	74,512,263,777	115,441,246	115,441,246	0	1,657,735	0	1,657,735
2088	80,223,624,546	100,484,332	100,484,332	0	1,351,081	0	1,351,081
2089	86,357,911,276	86,789,800	86,789,800	0	1,092,648	0	1,092,648
2090	92,943,056,275	74,336,286	74,336,286	0	876,277	0	876,277
2091	100,008,925,174	63,096,319	63,096,319	0	696,423	0	696,423
2092	107,587,455,005	53,035,986	53,035,986	0	548,111	0	548,111
2093	115,712,802,004	44,114,437	44,114,437	0	426,882	0	426,882
2094	124,421,500,018	36,283,484	36,283,484	0	328,749	0	328,749
2095	133,752,630,075	29,486,878	29,486,878	0	250,157	0	250,157
2096	143,748,002,268	23,659,060	23,659,060	0	187,936	0	187,936
2097	154,452,351,298	18,726,169	18,726,169	0	139,281	0	139,281
2098	165,913,544,284	14,608,265	14,608,265	0	101,735	0	101,735
2099	178,182,800,428	11,221,556	11,221,556	0	73,173	0	73,173
2100	191,314,923,302	8,480,583	8,480,583	0	51,779	0	51,779
2101	205,368,546,703	6,299,747	6,299,747	0	36,015	0	36,015
2102	220,406,395,631	4,595,367	4,595,367	0	24,598	0	24,598
2103	236,495,562,920	3,288,257	3,288,257	0	16,481	0	16,481
2104	253,707,802,004	2,305,677	2,305,677	0	10,820	0	10,820
2105	272,119,837,598	1,582,541	1,582,541	0	6,954	0	6,954
2106	291,813,696,257	1,062,125	1,062,125	0	4,370	0	4,370
2107	312,877,058,699	696,313	696,313	0	2,682	0	2,682
2108	335,403,635,837	445,442	445,442	0	1,607	0	1,607
2109	359,493,570,554	277,780	277,780	0	938	0	938
2110	385,253,867,348	168,709	168,709	0	534	0	534
2111	412,798,852,047	99,717	99,717	0	295	0	295
2112	442,250,663,836	57,328	57,328	0	159	0	159
2113	473,739,781,866	32,045	32,045	0	83	0	83
2114	507,405,588,769	17,419	17,419	0	42	0	42
2115	543,396,973,464	9,215	9,215	0	21	0	21
2116	581,872,975,838	4,749	4,749	0	10	0	10
2117	623,003,475,955	2,387	2,387	0	5	0	5
2118	666,969,930,672	1,168	1,168	0	2	0	2
2119	713,966,160,734	555	555	0	1	0	1
2120	764,199,191,685	255	255	0	0	0	0
2121	817,890,152,140	113	113	0	0	0	0
2122	875,275,233,282	66	66	0	0	0	0
<b>Totals</b>	<b>\$ 12,794,398,575</b>	<b>\$ 12,794,398,575</b>	<b>\$ 12,794,398,575</b>	<b>\$ 0</b>	<b>\$ 12,794,398,575</b>	<b>\$ 0</b>	<b>\$ 12,794,398,575</b>





# SECTION H

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## GLOSSARY OF TERMS

## Glossary of Terms

<b>Accrued Service</b>	Service credited under the system that was rendered before the date of the actuarial valuation.
<b>Actuarial Accrued Liability (AAL)</b>	The AAL is the difference between the actuarial present value of all benefits and the actuarial value of future normal costs. The definition comes from the fundamental equation of funding which states that the present value of all benefits is the sum of the Actuarial Accrued Liability and the present value of future normal costs. The AAL may also be referred to as "accrued liability" or "actuarial liability."
<b>Actuarial Assumptions</b>	These assumptions are estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and compensation increases. Actuarial assumptions are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (compensation increases, payroll growth, inflation and investment return) consist of an underlying real rate of return plus an assumption for a long-term average rate of inflation.
<b>Actuarial Cost Method</b>	A mathematical budgeting procedure for allocating the dollar amount of the actuarial present value of the 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.
<b>Actuarial Equivalent</b>	A single amount or series of amounts of equal actuarial value to another single amount or series of amounts, computed on the basis of appropriate actuarial assumptions.
<b>Actuarial Gain (Loss)</b>	The difference in liabilities between actual experience and expected experience during the period between two actuarial valuations is the gain (loss) on the accrued liabilities.
<b>Actuarial Present Value (APV)</b>	The amount of funds currently required to provide a payment or series of payments in the future. The present value is determined by discounting future payments at predetermined rates of interest and probabilities of payment.
<b>Actuarial Valuation</b>	The actuarial valuation report determines, as of the actuarial valuation date, the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions.
<b>Actuarial Valuation Date</b>	The date as of which an actuarial valuation is performed.
<b>Actuarially Determined Contribution (ADC) or Annual Required Contribution (ARC)</b>	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

<b>Amortization Method</b>	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
<b>Amortization Payment</b>	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
<b>Cost-of-Living Adjustments</b>	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
<b>Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)</b>	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.
<b>Covered-Employee Payroll</b>	The payroll of employees that are provided with pensions through the pension plan.
<b>Deferred Inflows and Outflows</b>	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.
<b>Deferred Retirement Option Program (DROP)</b>	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.

# Glossary of Terms

## 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.

## Entry Age Actuarial Cost Method (EAN)

The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit 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.

## Fiduciary Net Position

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

## GASB

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

## Money-Weighted Rate of Return

The money-weighted rate of return is a method of calculating the returns that adjusts for the changing amounts actually invested. For purposes of GASB Statement No. 67, money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense.

## Multiple-Employer Defined Benefit Pension Plan

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

## Municipal Bond Rate

The Municipal Bond Rate is the discount rate to be used for those benefit payments that occur after the assets of the trust have been depleted.

## Net Pension Liability (NPL)

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



## Glossary of Terms

<b>Other Postemployment Benefits (OPEB)</b>	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other post-employment benefits do not include termination benefits.
<b>Real Rate of Return</b>	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
<b>Service Cost</b>	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
<b>Total Pension Expense</b>	<p>The total pension expense is the sum of the following items that are recognized at the end of the employer’s fiscal year:</p> <ol style="list-style-type: none"><li>1. Service Cost</li><li>2. Interest on the Total Pension Liability</li><li>3. Current-Period Benefit Changes</li><li>4. Employee Contributions (made negative for addition here)</li><li>5. Projected Earnings on Plan Investments (made negative for addition here)</li><li>6. Pension Plan Administrative Expense</li><li>7. Other Changes in Plan Fiduciary Net Position</li><li>8. Recognition of Outflow (Inflow) of Resources due to Liabilities</li><li>9. Recognition of Outflow (Inflow) of Resources due to Assets</li></ol>
<b>Total Pension Liability (TPL)</b>	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
<b>Unfunded Actuarial Accrued Liability (UAAL)</b>	The UAAL is the difference between actuarial accrued liability and valuation assets.
<b>Valuation Assets</b>	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.