

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, 2024





April 8, 2025

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, 2024 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.

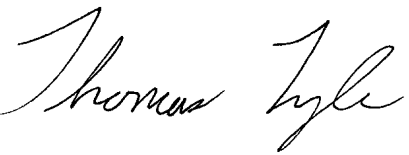
Paul T. Wood, Thomas A. Lyle, Dana Woolfrey, and Karli Fehrman are members of the American Academy of Actuaries (MAAA) and are experienced in performing valuations for public retirement systems. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein.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

Respectfully submitted,

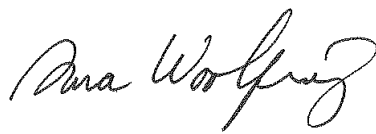
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SECTION A

EXECUTIVE SUMMARY

Executive Summary as of December 31, 2024

	2024
Actuarial Valuation Date	January 1, 2024
Measurement Date of the Net Pension Liability	December 31, 2024
Employer's Fiscal Year Ending Date (Reporting Date)	December 31, 2024

Membership

Number of	
- Retirees and Beneficiaries	31,420
- Inactive, Nonretired Members	28,823
- Active Members	35,385
- Total	95,628
Covered Payroll	\$ 2,026,280,051

Net Pension Liability

Total Pension Liability	\$ 11,887,297,623
Plan Fiduciary Net Position	9,801,724,315
Net Pension Liability	\$ 2,085,573,308
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	82.46 %
Net Pension Liability as a Percentage of Covered Payroll	102.93 %

Development of the Single Discount Rate

Single Discount Rate	6.80 %
Long-Term Expected Rate of Investment Return	6.80 %
Long-Term Municipal Bond Rate*	4.08 %
Last year ending December 31 in the 2024 to 2123 projection period for which projected benefit payments are fully funded	2123

Total Pension Expense	\$ 124,947,163
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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	\$ 135,231,114	\$ 2,510,786
Changes in assumptions	0	0
Net difference between projected and actual earnings on pension plan investments	508,620,139	772,673,521
Total	\$ 643,851,253	\$ 775,184,307

*Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in the Bond Buyer "20-Bond GO Index" as of December 31, 2024.



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, 2024.

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 2123. 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, 2024 and rolled forward to a measurement date of December 31, 2024.

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 4.08% (based on the daily rate closest to but not later than the measurement date of the Bond Buyer "20-Bond GO 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

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, 2024

A. Expense

1. Service Cost	\$ 230,593,832
2. Interest on the Total Pension Liability	772,961,124
3. Current-Period Benefit Changes	0
4. Employee Contributions (made negative for addition here)	(199,308,477)
5. Projected Earnings on Plan Investments (made negative for addition here)	(613,730,998)
6. Pension Plan Administrative Expense	8,888,244
7. Other Changes in Plan Fiduciary Net Position	667,908
8. Recognition of Outflow (Inflow) of Resources due to Liabilities	74,946,158
9. Recognition of Outflow (Inflow) of Resources due to Assets	(150,070,628)
10. Total Pension Expense	\$ 124,947,163 *

* 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, 2024

A. Outflows (Inflows) of Resources due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$ 150,420,579
2. Assumption Changes (gains) or losses	\$ 0
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}	3.5751
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	\$ 42,074,510
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	<u>\$ 42,074,510</u>
7. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses for the difference between expected and actual experience of the Total Pension Liability	\$ 108,346,069
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	<u>\$ 108,346,069</u>

B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$ (333,652,725)
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	\$ (66,730,545)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$ (266,922,180)

History of Deferred Outflows and Inflows of Resources by Source

Fiscal Year Ended December 31, 2024

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

Recognition Period	3.9136	3.8583	4.1947	4.0527	3.9563	3.8962	3.4657	3.3390	3.6117	3.5751		Deferred Net (Inflows)/Outflows at Measurement Date
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total	
Total	\$ (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	\$ 150,420,579		
2015	(16,913,231)										(16,913,231)	
2016	(16,913,231)	(11,349,740)									(28,262,971)	
2017	(16,913,231)	(11,349,740)	(13,517,317)								(41,780,288)	
2018	(15,451,927)	(11,349,740)	(13,517,317)	(12,143,398)							(52,462,382)	
2019	-	(9,741,481)	(13,517,317)	(12,143,398)	(1,780,516)						(37,182,712)	
2020	-	-	(13,517,317)	(12,143,398)	(1,780,516)	14,260,266					(13,180,965)	
2021	-	-	(2,631,823)	(12,143,398)	(1,780,516)	14,260,266	630,834				(1,664,637)	
2022	-	-	-	(639,956)	(1,702,708)	14,260,266	630,834	(7,406,444)			5,141,992	
2023	-	-	-	-	-	12,780,049	630,834	(7,406,444)	16,681,173		22,685,612	
2024	-	-	-	-	-	-	293,780	(7,406,444)	16,681,173	42,074,510	51,643,019	
2025	-	-	-	-	-	-	-	(2,510,786)	16,681,173	42,074,510	56,244,897	\$ 132,720,328
2026	-	-	-	-	-	-	-	-	10,203,872	42,074,510	52,278,382	
2027	-	-	-	-	-	-	-	-	-	24,197,049	24,197,049	
2028	-	-	-	-	-	-	-	-	-	-	-	
2029	-	-	-	-	-	-	-	-	-	-	-	
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	\$ 150,420,579	\$ 20,743,765	

Assumption changes - Net (inflows)/outflows of resources

Recognition Period	3.9136	3.8583	4.1947	4.0527	3.9563	3.8962	3.4657	3.3390	3.6117	3.5751	
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Total	\$ -	\$ -	\$ 290,801,601	\$ -	\$ -	\$ -	\$ 173,419,980	\$ -	\$ -	\$ -	
2015	-										-
2016	-	-									-
2017	-	-	69,325,959								69,325,959
2018	-	-	69,325,959	-							69,325,959
2019	-	-	69,325,959	-	-						69,325,959
2020	-	-	69,325,959	-	-	-					69,325,959
2021	-	-	13,497,765	-	-	-	50,038,947				63,536,712
2022	-	-	-	-	-	-	50,038,947	-			50,038,947
2023	-	-	-	-	-	-	50,038,947	-	-		50,038,947
2024	-	-	-	-	-	-	23,303,139	-	-	-	23,303,139
2025	-	-	-	-	-	-	-	-	-	-	-
2026	-	-	-	-	-	-	-	-	-	-	-
2027	-	-	-	-	-	-	-	-	-	-	-
2028	-	-	-	-	-	-	-	-	-	-	-
2029	-	-	-	-	-	-	-	-	-	-	-
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, 2024 (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	Deferred Net (Inflows)/Outflows at Measurement Date
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Total	\$ 577,381,461	\$ 35,536,046	\$ (464,917,747)	\$ 758,219,998	\$ (783,381,316)	\$ (270,952,701)	\$ (861,568,742)	\$ 1,271,550,349	\$ (555,729,319)	\$ (333,652,725)	
2015	115,476,292										115,476,292
2016	115,476,292	7,107,209									122,583,501
2017	115,476,292	7,107,209	(92,983,549)								29,599,952
2018	115,476,292	7,107,209	(92,983,549)	151,644,000							181,243,952
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)	(66,730,545)	(150,070,628)
2025	-	-	-	-	-	-	(172,313,750)	254,310,070	(111,145,864)	(66,730,545)	(95,880,089)
2026	-	-	-	-	-	-	-	254,310,069	(111,145,864)	(66,730,545)	76,433,660
2027	-	-	-	-	-	-	-	-	(111,145,863)	(66,730,545)	(177,876,408)
2028	-	-	-	-	-	-	-	-	-	(66,730,545)	(66,730,545)
2029	-	-	-	-	-	-	-	-	-	-	-
Thereafter	-	-	-	-	-	-	-	-	-	-	-
	\$ 577,381,461	\$ 35,536,046	\$ (464,917,747)	\$ 758,219,998	\$ (783,381,316)	\$ (270,952,701)	\$ (861,568,742)	\$ 1,271,550,349	\$ (555,729,319)	\$ (333,652,725)	\$ (627,514,696)

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

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Total
Total	\$ 511,189,841	\$ (8,254,655)	\$ (230,817,237)	\$ 709,006,450	\$ (790,425,572)	\$ (215,391,854)	\$ (685,962,480)	\$ 1,246,820,231	\$ (495,481,928)	\$ (183,232,146)	
2015	98,563,061										98,563,061
2016	98,563,061	(4,242,531)									94,320,530
2017	98,563,061	(4,242,531)	(37,174,907)								57,145,623
2018	100,024,365	(4,242,531)	(37,174,907)	139,500,602							198,107,529
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)	(24,656,035)	(75,124,470)
2025	-	-	-	-	-	-	(172,313,750)	251,799,284	(94,464,691)	(24,656,035)	(39,635,192)
2026	-	-	-	-	-	-	-	254,310,069	(100,941,992)	(24,656,035)	128,712,042
2027	-	-	-	-	-	-	-	-	(111,145,863)	(42,533,496)	(153,679,359)
2028	-	-	-	-	-	-	-	-	-	(66,730,545)	(66,730,545)
2029	-	-	-	-	-	-	-	-	-	-	-
Thereafter	-	-	-	-	-	-	-	-	-	-	-
	\$ 511,189,841	\$ (8,254,655)	\$ (230,817,237)	\$ 709,006,450	\$ (790,425,572)	\$ (215,391,854)	\$ (685,962,480)	\$ 1,246,820,231	\$ (495,481,928)	\$ (183,232,146)	\$ (142,549,350)



Statement of Outflows and Inflows

Arising from Current and Prior Reporting Periods

Fiscal Year Ended December 31, 2024

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	\$ 82,352,602	\$ 7,406,444	\$ 74,946,158
2. Due to Assets	254,310,070	404,380,698	(150,070,628)
3. Total	\$ 336,662,672	\$ 411,787,142	\$ (75,124,470)

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	\$ 59,049,463	\$ 7,406,444	\$ 51,643,019
2. Assumption Changes	23,303,139	0	23,303,139
3. Net Difference between projected and actual earnings on pension plan investments	254,310,070	404,380,698	(150,070,628)
4. Total	\$ 336,662,672	\$ 411,787,142	\$ (75,124,470)

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	\$ 135,231,114	\$ 2,510,786	\$ 132,720,328
2. Assumption Changes	0	0	0
3. Net Difference between projected and actual earnings on pension plan investments	508,620,139	772,673,521	(264,053,382)
4. Total	\$ 643,851,253	\$ 775,184,307	\$ (131,333,054)

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
2025	\$ (39,635,192)
2026	128,712,042
2027	(153,679,359)
2028	(66,730,545)
2029	0
Thereafter	0
Total	\$ (131,333,054)



Statement of Fiduciary Net Position as of December 31, 2024

	<u>2024</u>
Assets	
Cash and Deposits	\$ 428,774,594
Receivables	
Accounts Receivable - Sale of Investments	\$ 87,672,807
Accrued Interest and Other Dividends	19,260,153
Contributions	19,945,988
Accounts Receivable - Other	<u>564,307,857</u>
Total Receivables	<u>\$ 691,186,805</u>
Investments	
Fixed Income	\$ 1,589,843,941
Equities	4,702,405,290
Private Markets	1,219,955,633
Marketable Alternatives	1,766,627,531
Security Lending Collateral	348,650,020
Capital Assets, at Cost, Net of Accumulated Depreciation	<u>2,920,569</u>
Total Investments	<u>\$ 9,630,402,984</u>
Total Assets	<u><u>\$ 10,750,364,383</u></u>
Liabilities	
Payables	
Accounts Payable - Purchase of Investments	\$ 934,662,362
Accrued Expenses	13,063,196
Accounts Payable - Other	<u>914,510</u>
Total Liabilities	<u>\$ 948,640,068</u>
Net Position Restricted for Pensions	<u><u>\$ 9,801,724,315</u></u>

Statement of Changes in Fiduciary Net Position for Year Ended December 31, 2024

	<u>2024</u>
Additions	
Contributions	
Employer	\$ 198,698,711
Employee	196,222,320
Other Employer Contributions	2,748,718
Other Employee Contributions	3,086,157
Total Contributions	<u>\$ 400,755,906</u>
Investment Income	
Net Appreciation in Fair Value of Investments	\$ 821,310,718
Interest and Dividends	197,101,580
Less Investment Expense	(71,028,575)
Net Investment Income	<u>\$ 947,383,723</u>
Other	<u>\$ 0</u>
Total Additions	<u>\$ 1,348,139,629</u>
 Deductions	
Benefit Payments, including Refunds of Employee Contributions	\$ 727,893,213
Pension Plan Administrative Expense	8,888,244
Other	667,908
Total Deductions	<u>\$ 737,449,365</u>
 Net Increase in Net Position	 \$ 610,690,264
 Net Position Restricted for Pensions	
Beginning of Year	<u>\$ 9,191,034,051</u>
End of Year	<u>\$ 9,801,724,315</u>

SECTION C

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, 2024

A. Total pension liability

1. Service cost	\$ 230,593,832
2. Interest on the total pension liability	772,961,124
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the total pension liability	150,420,579
5. Changes of assumptions	0
6. Benefit payments, including refunds of employee contributions	(727,893,213)
7. Net change in total pension liability	426,082,322
8. Total pension liability – beginning	11,461,215,301
9. Total pension liability – ending	\$ 11,887,297,623

B. Plan fiduciary net position

1. Contributions – employer	\$ 201,447,429
2. Contributions – employee	199,308,477
3. Net investment income	947,383,723
4. Benefit payments, including refunds of employee contributions	(727,893,213)
5. Pension plan administrative expense	(8,888,244)
6. Other	(667,908)
7. Net change in plan fiduciary net position	610,690,264
8. Plan fiduciary net position – beginning	9,191,034,051
9. Plan fiduciary net position – ending	\$ 9,801,724,315

C. Net pension liability

\$ 2,085,573,308

D. Plan fiduciary net position as a percentage of the total pension liability

82.46 %

E. Covered-employee payroll

\$ 2,026,280,051

F. Net pension liability as a percentage of covered-employee payroll

102.93 %



Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios Multiyear

Fiscal year ending December 31,	2024	2023	2022	2021	2020	2019	2018	2017	2016	2015
Total pension liability										
Service cost	\$ 230,593,832	\$ 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
Interest on the total pension liability	772,961,124	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
Changes of benefit terms	0	0	0	0	0	0	0	0	0	0
Difference between expected and actual experience	150,420,579	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)
Changes of assumptions	0	0	0	173,419,980	0	0	0	290,801,601	0	0
Benefit payments, including refunds of employee contributions	(727,893,213)	(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)
Net change in total pension liability	426,082,322	321,810,443	224,816,711	446,986,504	327,116,520	263,825,643	238,792,956	541,861,601	338,860,698	320,286,123
Total pension liability - beginning	11,461,215,301	11,139,404,858	10,914,588,147	10,467,601,643	10,140,485,123	9,876,659,480	9,637,866,524	9,096,004,923	8,757,144,225	8,436,858,102
Total pension liability - ending (a)	\$ 11,887,297,623	\$ 11,461,215,301	\$ 11,139,404,858	\$ 10,914,588,147	\$ 10,467,601,643	\$ 10,140,485,123	\$ 9,876,659,480	\$ 9,637,866,524	\$ 9,096,004,923	\$ 8,757,144,225
Plan fiduciary net position										
Employer contributions	\$ 201,447,429	\$ 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
Employee contributions	199,308,477	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
Pension plan net investment income	947,383,723	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)
Benefit payments, including refunds of employee contributions	(727,893,213)	(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)
Pension plan administrative expense	(8,888,244)	(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)
Other	(667,908)	(653,550)	(544,320)	(298,065)	(294,893)	(309,531)	(287,669)	(312,336)	(312,336)	(312,704)
Net change in plan fiduciary net position	610,690,264	784,443,455	(983,276,051)	1,095,624,750	503,683,055	959,190,245	(527,157,415)	680,021,307	250,708,301	(244,369,471)
Plan fiduciary net position - beginning	9,191,034,051	8,406,590,596	9,389,866,647	8,294,241,897	7,790,558,842	6,831,368,597	7,358,526,012	6,678,504,705	6,427,796,404	6,672,165,875
Plan fiduciary net position - ending (b)	\$ 9,801,724,315	\$ 9,191,034,051	\$ 8,406,590,596	\$ 9,389,866,647	\$ 8,294,241,897	\$ 7,790,558,842	\$ 6,831,368,597	\$ 7,358,526,012	\$ 6,678,504,705	\$ 6,427,796,404
Net pension liability - ending (a) - (b)	\$ 2,085,573,308	\$ 2,270,181,250	\$ 2,732,814,262	\$ 1,524,721,500	\$ 2,173,359,746	\$ 2,349,926,281	\$ 3,045,290,883	\$ 2,279,340,512	\$ 2,417,500,218	\$ 2,329,347,821
Plan fiduciary net position as a percentage of total pension liability	82.46 %	80.19 %	75.47 %	86.03 %	79.24 %	76.83 %	69.17 %	76.35 %	73.42 %	73.40 %
Covered-employee payroll	\$ 2,026,280,051	\$ 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
Projected valuation payroll	\$ 2,076,937,052	\$ 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
Net pension liability as a percentage of covered-employee payroll	102.93 %	120.86 %	151.36 %	83.78 %	122.07 %	135.19 %	174.88 %	128.31 %	135.59 %	133.56 %

Notes to Schedule:

For 2024 through 2015, "Other" changes to Plan Fiduciary Net Position includes other funding sources and depreciation expenses.



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
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 %
2024	11,887,297,623	9,801,724,315	2,085,573,308	82.46 %	2,026,280,051	102.93 %

* 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
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 %
2024	218,078,391	201,447,429	16,630,962	2,026,280,051	9.94 %

* 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, 2024
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	23 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. 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.
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Schedule of Investment Returns Multiyear Last 10 Fiscal Years

FY Ending December 31,	Annual Return ¹
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 %
2024	10.54 %

¹ Annual money-weighted rate of return, net of investment expenses.

SECTION D

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%
\$ 3,474,125,001	\$ 2,085,573,308	\$ 935,678,679

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	31,420
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	28,823
Active Plan Members	<u>35,385</u>
Total Plan Members	95,628

SECTION E

SUMMARY OF BENEFITS

Summary of Benefits

Covered Members	Any full-time or regular part-time employee of an employer as defined under W.S. 9-3-402(a)(vii)
Tier	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.
Final Average Salary	<p>For Tier 1 member: employee's average annual salary for the highest paid three continuous years of service.</p> <p>For Tier 2 member: employee's average annual salary for the highest paid five continuous years of service.</p>
Service Retirement	
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	<p>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.</p> <p>For Tier 2 member: 2.000% of employee's Final (5-year) Average Salary for each year of credited service.</p> <p>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.</p>
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.

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.

Contributions

Employee	9.25% of salary
Employer	9.37% of salary

Interest	3.00% annually (0.00% for non-vested members).
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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 1st 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

ACTUARIAL COST METHOD AND ACTUARIAL ASSUMPTIONS

Summary of Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2024 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 1st, 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 2024 using the MP-2020 Ultimate Scale					
	Male	Female	Male	Female	Male	Female
20	0.03%	0.01%	0.03%	0.01%	0.34%	0.19%
25	0.02%	0.01%	0.02%	0.01%	0.23%	0.14%
30	0.03%	0.01%	0.03%	0.01%	0.29%	0.21%
35	0.04%	0.02%	0.04%	0.02%	0.38%	0.33%
40	0.05%	0.03%	0.05%	0.03%	0.53%	0.52%
45	0.08%	0.05%	0.09%	0.06%	0.83%	0.81%
50	0.12%	0.07%	0.25%	0.19%	1.33%	1.23%
55	0.18%	0.10%	0.36%	0.24%	1.75%	1.44%
60	0.26%	0.15%	0.51%	0.33%	2.07%	1.62%
65	0.39%	0.25%	0.76%	0.53%	2.53%	1.88%
70	0.59%	0.41%	1.28%	0.92%	3.28%	2.40%
75			2.27%	1.64%	4.40%	3.39%
80			4.09%	2.96%	6.29%	5.15%
85			7.60%	5.66%	9.57%	8.26%
90			13.43%	10.83%	14.88%	12.51%
95			21.64%	18.33%	22.33%	18.25%
100			31.27%	27.81%	31.27%	27.00%

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

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 4.08%; 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 2024 to 2073

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)
2024	\$ 2,026,280,051	\$ 50,657,001	\$ 2,076,937,052	\$ 199,308,477	\$ 197,764,637	\$ 4,020,231	\$ 401,093,345
2025	2,008,678,507	120,181,972	2,128,860,479	185,802,762	188,213,176	9,537,858	383,553,796
2026	1,886,496,948	295,585,043	2,182,081,991	174,500,968	176,764,764	23,462,262	374,727,994
2027	1,775,075,634	461,558,407	2,236,634,041	164,194,496	166,324,587	36,641,614	367,160,697
2028	1,673,512,031	619,037,861	2,292,549,892	154,799,863	156,808,077	49,108,537	360,716,477
2029	1,580,868,286	768,995,353	2,349,863,639	146,230,316	148,127,358	60,906,236	355,263,910
2030	1,494,997,938	913,612,292	2,408,610,230	138,287,309	140,081,307	72,232,087	350,600,703
2031	1,414,046,430	1,054,779,056	2,468,825,486	130,799,295	132,496,151	83,260,206	346,555,652
2032	1,336,718,058	1,193,828,065	2,530,546,123	123,646,420	125,250,482	94,121,661	343,018,563
2033	1,262,233,556	1,331,576,220	2,593,809,776	116,756,604	118,271,284	104,900,146	339,928,034
2034	1,188,764,367	1,469,890,653	2,658,655,020	109,960,704	111,387,221	115,754,614	337,102,539
2035	1,115,600,390	1,609,521,006	2,725,121,396	103,193,036	104,531,757	126,753,046	334,477,839
2036	1,043,015,129	1,750,234,302	2,793,249,431	96,478,899	97,730,518	137,892,031	332,101,448
2037	971,048,222	1,892,032,445	2,863,080,667	89,821,961	90,987,218	149,184,244	329,993,423
2038	900,538,927	2,034,118,757	2,934,657,684	83,299,851	84,380,497	160,573,084	328,253,432
2039	832,494,769	2,175,529,357	3,008,024,126	77,005,766	78,004,760	171,984,834	326,995,360
2040	766,732,744	2,316,491,985	3,083,224,729	70,922,779	71,842,858	183,436,051	326,201,688
2041	703,076,397	2,457,228,950	3,160,305,347	65,034,567	65,878,258	194,940,938	325,853,763
2042	641,993,841	2,597,319,140	3,239,312,981	59,384,430	60,154,823	206,461,233	326,000,486
2043	583,387,645	2,736,908,161	3,320,295,806	53,963,357	54,663,422	218,002,757	326,629,536
2044	527,397,762	2,875,905,439	3,403,303,201	48,784,293	49,417,170	229,551,681	327,753,144
2045	474,327,601	3,014,058,180	3,488,385,781	43,875,303	44,444,496	241,081,841	329,401,640
2046	424,331,848	3,151,263,578	3,575,595,426	39,250,696	39,759,894	252,579,372	331,589,962
2047	377,738,896	3,287,246,416	3,664,985,312	34,940,848	35,394,135	264,015,539	334,350,522
2048	334,855,952	3,421,753,993	3,756,609,945	30,974,176	31,376,003	275,362,142	337,712,321
2049	295,852,011	3,554,673,183	3,850,525,194	27,366,311	27,721,333	286,609,173	341,696,817
2050	260,024,277	3,686,764,047	3,946,788,324	24,052,246	24,364,275	297,816,291	346,232,812
2051	226,714,703	3,818,743,329	4,045,458,032	20,971,110	21,243,168	309,030,591	351,244,869
2052	196,193,148	3,950,401,335	4,146,594,483	18,147,866	18,383,298	320,225,211	356,756,375
2053	168,450,236	4,081,809,109	4,250,259,345	15,581,647	15,783,787	331,394,508	362,759,942
2054	143,230,827	4,213,285,002	4,356,515,829	13,248,851	13,420,728	342,552,226	369,221,805
2055	120,539,325	4,344,889,400	4,465,428,725	11,149,888	11,294,535	353,690,628	376,135,051
2056	100,397,955	4,476,666,488	4,577,064,443	9,286,811	9,407,288	364,804,485	383,498,584
2057	82,839,396	4,608,651,658	4,691,491,054	7,662,644	7,762,051	375,895,170	391,319,865
2058	67,884,971	4,740,893,359	4,808,778,330	6,279,360	6,360,822	386,970,044	399,610,226
2059	55,372,169	4,873,625,619	4,928,997,788	5,121,926	5,188,372	398,052,590	408,362,888
2060	44,961,151	5,007,261,582	5,052,222,733	4,158,906	4,212,860	409,180,570	417,552,336
2061	36,304,513	5,142,223,788	5,178,528,301	3,358,167	3,401,733	420,391,735	427,151,635
2062	29,161,947	5,278,829,562	5,307,991,509	2,697,480	2,732,474	431,714,930	437,144,884
2063	23,283,119	5,417,408,178	5,440,691,297	2,153,688	2,181,628	443,179,036	447,514,352
2064	18,425,677	5,558,282,902	5,576,708,579	1,704,375	1,726,486	454,812,144	458,243,005
2065	14,436,011	5,701,690,282	5,716,126,293	1,335,331	1,352,654	466,635,270	469,323,255
2066	11,216,480	5,847,812,970	5,859,029,450	1,037,524	1,050,984	478,664,817	480,753,325
2067	8,660,142	5,996,845,044	6,005,505,186	801,063	811,455	490,917,998	492,530,516
2068	6,652,988	6,148,989,828	6,155,642,816	615,401	623,385	503,413,584	504,652,370
2069	5,088,947	6,304,444,939	6,309,533,886	470,728	476,834	516,170,027	517,117,589
2070	3,880,512	6,463,391,721	6,467,272,233	358,947	363,604	529,204,129	529,926,680
2071	2,951,013	6,626,003,026	6,628,954,039	272,969	276,510	542,531,413	543,080,892
2072	2,238,853	6,792,439,037	6,794,677,890	207,094	209,781	556,166,414	556,583,289
2073	1,708,377	6,962,836,460	6,964,544,837	158,025	160,075	570,121,351	570,439,451



Single Discount Rate Development

Projection of Contributions

Ending December 31 for 2074 to 2123 (concluded)

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)
2074	\$ 1,298,852	\$ 7,137,359,606	\$ 7,138,658,458	\$ 120,144	\$ 121,702	\$ 584,410,631	\$ 584,652,477
2075	981,406	7,316,143,513	7,317,124,919	90,780	91,958	599,046,182	\$ 599,228,920
2076	736,844	7,499,316,198	7,500,053,042	68,158	69,042	614,039,207	614,176,407
2077	546,623	7,687,007,745	7,687,554,368	50,563	51,219	629,400,989	629,502,771
2078	394,566	7,879,348,661	7,879,743,227	36,497	36,971	645,142,789	645,216,257
2079	273,467	8,076,463,341	8,076,736,808	25,296	25,624	661,275,256	661,326,176
2080	182,602	8,278,472,626	8,278,655,228	16,891	17,110	677,808,667	677,842,668
2081	117,130	8,485,504,479	8,485,621,609	10,835	10,975	694,753,735	694,775,545
2082	70,909	8,697,691,240	8,697,762,149	6,559	6,644	712,121,519	712,134,722
2083	40,614	8,915,165,589	8,915,206,203	3,757	3,806	729,923,079	729,930,642
2084	21,600	9,138,064,758	9,138,086,358	1,998	2,024	748,169,761	748,173,783
2085	9,326	9,366,529,191	9,366,538,517	863	874	766,873,026	766,874,763
2086	2,650	9,600,699,330	9,600,701,980	245	248	786,044,296	786,044,789
2087	176	9,840,719,354	9,840,719,530	16	16	805,695,286	805,695,318
2088	40	10,086,737,478	10,086,737,518	4	4	825,838,035	825,838,043
2089	0	10,338,905,956	10,338,905,956	0	0	846,484,926	846,484,926
2090	0	10,597,378,605	10,597,378,605	0	0	867,648,472	867,648,472
2091	0	10,862,313,070	10,862,313,070	0	0	889,341,495	889,341,495
2092	0	11,133,870,897	11,133,870,897	0	0	911,577,133	911,577,133
2093	0	11,412,217,669	11,412,217,669	0	0	934,368,855	934,368,855
2094	0	11,697,523,111	11,697,523,111	0	0	957,730,467	957,730,467
2095	0	11,989,961,189	11,989,961,189	0	0	981,676,123	981,676,123
2096	0	12,289,710,219	12,289,710,219	0	0	1,006,220,346	1,006,220,346
2097	0	12,596,952,974	12,596,952,974	0	0	1,031,378,029	1,031,378,029
2098	0	12,911,876,798	12,911,876,798	0	0	1,057,164,459	1,057,164,459
2099	0	13,234,673,718	13,234,673,718	0	0	1,083,595,316	1,083,595,316
2100	0	13,565,540,561	13,565,540,561	0	0	1,110,686,691	1,110,686,691
2101	0	13,904,679,075	13,904,679,075	0	0	1,138,455,089	1,138,455,089
2102	0	14,252,296,052	14,252,296,052	0	0	1,166,917,436	1,166,917,436
2103	0	14,608,603,453	14,608,603,453	0	0	1,196,091,089	1,196,091,089
2104	0	14,973,818,539	14,973,818,539	0	0	1,225,993,844	1,225,993,844
2105	0	15,348,164,002	15,348,164,002	0	0	1,256,643,945	1,256,643,945
2106	0	15,731,868,102	15,731,868,102	0	0	1,288,060,097	1,288,060,097
2107	0	16,125,164,805	16,125,164,805	0	0	1,320,261,475	1,320,261,475
2108	0	16,528,293,925	16,528,293,925	0	0	1,353,267,737	1,353,267,737
2109	0	16,941,501,273	16,941,501,273	0	0	1,387,099,031	1,387,099,031
2110	0	17,365,038,805	17,365,038,805	0	0	1,421,776,014	1,421,776,014
2111	0	17,799,164,775	17,799,164,775	0	0	1,457,319,857	1,457,319,857
2112	0	18,244,143,894	18,244,143,894	0	0	1,493,752,258	1,493,752,258
2113	0	18,700,247,491	18,700,247,491	0	0	1,531,095,458	1,531,095,458
2114	0	19,167,753,678	19,167,753,678	0	0	1,569,372,249	1,569,372,249
2115	0	19,646,947,520	19,646,947,520	0	0	1,608,605,989	1,608,605,989
2116	0	20,138,121,208	20,138,121,208	0	0	1,648,820,618	1,648,820,618
2117	0	20,641,574,238	20,641,574,238	0	0	1,690,040,668	1,690,040,668
2118	0	21,157,613,594	21,157,613,594	0	0	1,732,291,281	1,732,291,281
2119	0	21,686,553,934	21,686,553,934	0	0	1,775,598,226	1,775,598,226
2120	0	22,228,717,782	22,228,717,782	0	0	1,819,987,910	1,819,987,910
2121	0	22,784,435,727	22,784,435,727	0	0	1,865,487,403	1,865,487,403
2122	0	23,354,046,620	23,354,046,620	0	0	1,912,124,447	1,912,124,447
2123	0	23,937,897,786	23,937,897,786	0	0	1,959,927,475	1,959,927,475



Single Discount Rate Development

Projection of Plan Net Position

Ending December 31 for 2024 to 2073

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)
2024	\$ 9,191,034,051	\$ 400,755,906	\$ 727,893,213	\$ 9,556,152	\$ 947,383,723	\$ 9,801,724,315
2025	9,801,724,315	383,553,796	742,032,108	8,728,328	654,237,550	10,088,755,225
2026	10,088,755,225	374,727,994	762,230,432	8,946,536	672,777,763	10,365,084,013
2027	10,365,084,013	367,160,697	782,116,289	9,170,200	690,642,584	10,631,600,805
2028	10,631,600,805	360,716,477	803,663,999	9,399,455	707,821,985	10,887,075,813
2029	10,887,075,813	355,263,910	825,527,882	9,634,441	724,272,942	11,131,450,342
2030	11,131,450,342	350,600,703	847,187,627	9,875,302	740,002,094	11,364,990,210
2031	11,364,990,210	346,555,652	868,578,795	10,122,184	755,023,940	11,587,868,822
2032	11,587,868,822	343,018,563	889,177,995	10,375,239	769,364,085	11,800,698,236
2033	11,800,698,236	339,928,034	909,275,115	10,634,620	783,052,396	12,003,768,931
2034	12,003,768,931	337,102,539	929,820,562	10,900,486	796,070,768	12,196,221,190
2035	12,196,221,190	334,477,839	950,251,542	11,172,998	808,377,407	12,377,651,897
2036	12,377,651,897	332,101,448	970,414,957	11,452,323	819,951,604	12,547,837,669
2037	12,547,837,669	329,993,423	990,101,769	11,738,631	830,785,824	12,706,776,516
2038	12,706,776,516	328,253,432	1,008,603,140	12,032,097	840,906,964	12,855,301,674
2039	12,855,301,674	326,995,360	1,025,947,996	12,332,899	850,374,518	12,994,390,657
2040	12,994,390,657	326,201,688	1,042,254,236	12,641,221	859,250,422	13,124,947,310
2041	13,124,947,310	325,853,763	1,056,638,230	12,957,252	867,625,058	13,248,830,650
2042	13,248,830,650	326,000,486	1,069,093,793	13,281,183	875,626,675	13,368,082,835
2043	13,368,082,835	326,629,536	1,079,264,758	13,613,213	883,405,630	13,485,240,030
2044	13,485,240,030	327,753,144	1,087,184,323	13,953,543	891,133,676	13,602,988,985
2045	13,602,988,985	329,401,640	1,092,847,628	14,302,382	898,994,681	13,724,235,295
2046	13,724,235,295	331,589,962	1,095,598,550	14,659,941	907,208,659	13,852,775,425
2047	13,852,775,425	334,350,522	1,095,788,334	15,026,440	916,023,101	13,992,334,274
2048	13,992,334,274	337,712,321	1,093,448,491	15,402,101	925,691,208	14,146,887,211
2049	14,146,887,211	341,696,817	1,088,814,637	15,787,153	936,476,136	14,320,458,374
2050	14,320,458,374	346,232,812	1,081,884,305	16,181,832	948,649,220	14,517,274,269
2051	14,517,274,269	351,244,869	1,072,429,277	16,586,378	962,502,965	14,742,006,448
2052	14,742,006,448	356,756,375	1,060,895,437	17,001,037	978,340,897	14,999,207,246
2053	14,999,207,246	362,759,942	1,048,302,760	17,426,063	996,438,213	15,292,676,578
2054	15,292,676,578	369,221,805	1,034,591,737	17,861,715	1,017,054,157	15,626,499,088
2055	15,626,499,088	376,135,051	1,020,092,709	18,308,258	1,040,455,200	16,004,688,372
2056	16,004,688,372	383,498,584	1,004,292,489	18,765,964	1,066,931,381	16,432,059,884
2057	16,432,059,884	391,319,865	986,534,359	19,235,113	1,096,832,352	16,914,442,630
2058	16,914,442,630	399,610,226	967,417,212	19,715,991	1,130,534,828	17,457,454,481
2059	17,457,454,481	408,362,888	946,726,100	20,208,891	1,168,427,776	18,067,310,154
2060	18,067,310,154	417,552,336	924,326,332	20,714,113	1,210,937,437	18,750,759,483
2061	18,750,759,483	427,151,635	900,424,691	21,231,966	1,258,514,974	19,514,769,435
2062	19,514,769,435	437,144,884	875,636,510	21,762,765	1,311,613,021	20,366,128,065
2063	20,366,128,065	447,514,352	849,958,620	22,306,834	1,370,692,669	21,312,069,631
2064	21,312,069,631	458,243,005	822,592,725	22,864,505	1,436,271,960	22,361,127,367
2065	22,361,127,367	469,323,255	793,349,979	23,436,118	1,508,937,207	23,522,601,731
2066	23,522,601,731	480,753,325	762,529,110	24,022,021	1,589,310,778	24,806,114,703
2067	24,806,114,703	492,530,516	730,066,881	24,622,571	1,678,048,981	26,222,004,748
2068	26,222,004,748	504,652,370	696,521,943	25,238,136	1,775,836,056	27,780,733,094
2069	27,780,733,094	517,117,589	662,372,801	25,869,089	1,883,367,308	29,492,976,101
2070	29,492,976,101	529,926,680	627,621,364	26,515,816	2,001,368,670	31,370,134,271
2071	31,370,134,271	543,080,892	592,390,170	27,178,712	2,130,611,307	33,424,257,587
2072	33,424,257,587	556,583,289	557,120,809	27,858,179	2,271,899,939	35,667,761,827
2073	35,667,761,827	570,439,451	522,431,393	28,554,634	2,426,058,343	38,113,273,595



Single Discount Rate Development

Projection of Plan Net Position

Ending December 31 for 2074 to 2123 (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)
2074	\$ 38,113,273,595	\$ 584,652,477	\$ 488,437,163	\$ 29,268,500	\$ 2,593,941,363	\$ 40,774,161,772
2075	40,774,161,772	599,228,920	455,244,864	30,000,212	2,776,454,718	43,664,600,334
2076	43,664,600,334	614,176,407	422,950,111	30,750,217	2,974,559,280	46,799,635,693
2077	46,799,635,693	629,502,771	391,640,833	31,518,973	3,189,275,512	50,195,254,170
2078	50,195,254,170	645,216,257	361,392,602	32,306,947	3,421,688,217	53,868,459,095
2079	53,868,459,095	661,326,176	332,268,017	33,114,621	3,672,951,823	57,837,354,456
2080	57,837,354,456	677,842,668	304,325,980	33,942,486	3,944,295,755	62,121,224,413
2081	62,121,224,413	694,775,545	277,619,077	34,791,049	4,237,029,886	66,740,619,718
2082	66,740,619,718	712,134,722	252,187,766	35,660,825	4,552,550,632	71,717,456,481
2083	71,717,456,481	729,930,642	228,064,175	36,552,345	4,892,347,543	77,075,118,145
2084	77,075,118,145	748,173,783	205,270,862	37,466,154	5,258,010,271	82,838,565,184
2085	82,838,565,184	766,874,763	183,818,932	38,402,808	5,651,236,095	89,034,454,302
2086	89,034,454,302	786,044,789	163,712,640	39,362,878	6,073,837,883	95,691,261,456
2087	95,691,261,456	805,695,318	144,951,335	40,346,950	6,527,752,386	102,839,410,875
2088	102,839,410,875	825,838,043	127,529,311	41,355,624	7,015,049,013	110,511,412,996
2089	110,511,412,996	846,484,926	111,434,116	42,389,514	7,537,939,269	118,742,013,562
2090	118,742,013,562	867,648,472	96,649,387	43,449,252	8,098,786,810	127,568,350,205
2091	127,568,350,205	889,341,495	83,153,721	44,535,484	8,700,118,117	137,030,120,612
2092	137,030,120,612	911,577,133	70,920,792	45,648,871	9,344,633,931	147,169,762,013
2093	147,169,762,013	934,368,855	59,919,286	46,790,092	10,035,221,457	158,032,642,948
2094	158,032,642,948	957,730,467	50,112,160	47,959,845	10,774,967,434	169,667,268,843
2095	169,667,268,843	981,676,123	41,455,301	49,158,841	11,567,172,155	182,125,502,979
2096	182,125,502,979	1,006,220,346	33,895,564	50,387,812	12,415,364,563	195,462,804,512
2097	195,462,804,512	1,031,378,029	27,370,488	51,647,507	13,323,318,440	209,738,482,987
2098	209,738,482,987	1,057,164,459	21,809,019	52,938,695	14,295,069,699	225,015,969,431
2099	225,015,969,431	1,083,595,316	17,132,672	54,262,162	15,334,934,770	241,363,104,683
2100	241,363,104,683	1,110,686,691	13,257,602	55,618,716	16,447,530,148	258,852,445,203
2101	258,852,445,203	1,138,455,089	10,096,496	57,009,184	17,637,793,114	277,561,587,726
2102	277,561,587,726	1,166,917,436	7,560,407	58,434,414	18,911,003,758	297,573,514,099
2103	297,573,514,099	1,196,091,089	5,561,032	59,895,274	20,272,808,352	318,976,957,235
2104	318,976,957,235	1,225,993,844	4,013,571	61,392,656	21,729,244,134	341,866,788,986
2105	341,866,788,986	1,256,643,945	2,839,161	62,927,472	23,286,765,606	366,344,431,904
2106	366,344,431,904	1,288,060,097	1,966,274	64,500,659	24,952,272,489	392,518,297,556
2107	392,518,297,556	1,320,261,475	1,331,687	66,113,176	26,733,139,492	420,504,253,661
2108	420,504,253,661	1,353,267,737	880,996	67,766,005	28,637,248,064	450,426,122,461
2109	450,426,122,461	1,387,099,031	568,692	69,460,155	30,673,020,280	482,416,212,925
2110	482,416,212,925	1,421,776,014	357,803	71,196,659	32,849,455,042	516,615,889,519
2111	516,615,889,519	1,457,319,857	219,200	72,976,576	35,176,166,779	553,176,180,379
2112	553,176,180,379	1,493,752,258	130,644	74,800,990	37,663,426,840	592,258,427,843
2113	592,258,427,843	1,531,095,458	75,700	76,671,015	40,322,207,758	634,034,984,344
2114	634,034,984,344	1,569,372,249	42,630	78,587,790	43,164,230,616	678,689,956,789
2115	678,689,956,789	1,608,605,989	23,333	80,552,485	46,202,015,696	726,420,002,656
2116	726,420,002,656	1,648,820,618	12,422	82,566,297	49,448,936,648	777,435,181,203
2117	777,435,181,203	1,690,040,668	6,440	84,630,454	52,919,278,396	831,959,863,373
2118	831,959,863,373	1,732,291,281	3,256	86,746,216	56,628,299,034	890,233,704,216
2119	890,233,704,216	1,775,598,226	1,606	88,914,871	60,592,295,966	952,512,681,931
2120	952,512,681,931	1,819,987,910	771	91,137,743	64,828,676,573	1,019,070,207,900
2121	1,019,070,207,900	1,865,487,403	358	93,416,186	69,356,033,701	1,090,198,312,460
2122	1,090,198,312,460	1,912,124,447	160	95,751,591	74,194,226,303	1,166,208,911,458
2123	1,166,208,911,458	1,959,927,475	95	98,145,381	79,364,465,560	1,247,435,159,017



Single Discount Rate Development

Present Values of Projected Benefits

Ending December 31 for 2024 to 2073

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 ⁿ ((a)-.5)	(g)=(e)*vf ⁿ ((a)-.5)	(h)=(c)/((1+SDR) ⁿ ((a)-.5))
2024	\$ 9,191,034,051	\$ 727,893,213	\$ 727,893,213	\$ 0	\$ 704,339,498	\$ 0	\$ 704,339,498
2025	9,801,724,315	742,032,108	742,032,108	0	672,304,191	0	672,304,191
2026	10,088,755,225	762,230,432	762,230,432	0	646,633,429	0	646,633,429
2027	10,365,084,013	782,116,289	782,116,289	0	621,257,932	0	621,257,932
2028	10,631,600,805	803,663,999	803,663,999	0	597,728,381	0	597,728,381
2029	10,887,075,813	825,527,882	825,527,882	0	574,896,754	0	574,896,754
2030	11,131,450,342	847,187,627	847,187,627	0	552,416,271	0	552,416,271
2031	11,364,990,210	868,578,795	868,578,795	0	530,303,908	0	530,303,908
2032	11,587,868,822	889,177,995	889,177,995	0	508,315,156	0	508,315,156
2033	11,800,698,236	909,275,115	909,275,115	0	486,707,911	0	486,707,911
2034	12,003,768,931	929,820,562	929,820,562	0	466,016,177	0	466,016,177
2035	12,196,221,190	950,251,542	950,251,542	0	445,932,553	0	445,932,553
2036	12,377,651,897	970,414,957	970,414,957	0	426,399,634	0	426,399,634
2037	12,547,837,669	990,101,769	990,101,769	0	407,350,192	0	407,350,192
2038	12,706,776,516	1,008,603,140	1,008,603,140	0	388,541,267	0	388,541,267
2039	12,855,301,674	1,025,947,996	1,025,947,996	0	370,058,966	0	370,058,966
2040	12,994,390,657	1,042,254,236	1,042,254,236	0	352,004,325	0	352,004,325
2041	13,124,947,310	1,056,638,230	1,056,638,230	0	334,140,715	0	334,140,715
2042	13,248,830,650	1,069,093,793	1,069,093,793	0	316,553,874	0	316,553,874
2043	13,368,082,835	1,079,264,758	1,079,264,758	0	299,218,587	0	299,218,587
2044	13,485,240,030	1,087,184,323	1,087,184,323	0	282,223,063	0	282,223,063
2045	13,602,988,985	1,092,847,628	1,092,847,628	0	265,630,342	0	265,630,342
2046	13,724,235,295	1,095,598,550	1,095,598,550	0	249,343,622	0	249,343,622
2047	13,852,775,425	1,095,788,334	1,095,788,334	0	233,508,253	0	233,508,253
2048	13,992,334,274	1,093,448,491	1,093,448,491	0	218,173,821	0	218,173,821
2049	14,146,887,211	1,088,814,637	1,088,814,637	0	203,416,888	0	203,416,888
2050	14,320,458,374	1,081,884,305	1,081,884,305	0	189,252,935	0	189,252,935
2051	14,517,274,269	1,072,429,277	1,072,429,277	0	175,654,473	0	175,654,473
2052	14,742,006,448	1,060,895,437	1,060,895,437	0	162,701,621	0	162,701,621
2053	14,999,207,246	1,048,302,760	1,048,302,760	0	150,534,060	0	150,534,060
2054	15,292,676,578	1,034,591,737	1,034,591,737	0	139,105,979	0	139,105,979
2055	15,626,499,088	1,020,092,709	1,020,092,709	0	128,423,702	0	128,423,702
2056	16,004,688,372	1,004,292,489	1,004,292,489	0	118,384,407	0	118,384,407
2057	16,432,059,884	986,534,359	986,534,359	0	108,886,804	0	108,886,804
2058	16,914,442,630	967,417,212	967,417,212	0	99,978,264	0	99,978,264
2059	17,457,454,481	946,726,100	946,726,100	0	91,610,421	0	91,610,421
2060	18,067,310,154	924,326,332	924,326,332	0	83,748,030	0	83,748,030
2061	18,750,759,483	900,424,691	900,424,691	0	76,388,049	0	76,388,049
2062	19,514,769,435	875,636,510	875,636,510	0	69,555,365	0	69,555,365
2063	20,366,128,065	849,958,620	849,958,620	0	63,216,915	0	63,216,915
2064	21,312,069,631	822,592,725	822,592,725	0	57,286,083	0	57,286,083
2065	22,361,127,367	793,349,979	793,349,979	0	51,731,828	0	51,731,828
2066	23,522,601,731	762,529,110	762,529,110	0	46,556,271	0	46,556,271
2067	24,806,114,703	730,066,881	730,066,881	0	41,736,224	0	41,736,224
2068	26,222,004,748	696,521,943	696,521,943	0	37,283,275	0	37,283,275
2069	27,780,733,094	662,372,801	662,372,801	0	33,197,891	0	33,197,891
2070	29,492,976,101	627,621,364	627,621,364	0	29,453,334	0	29,453,334
2071	31,370,134,271	592,390,170	592,390,170	0	26,029,950	0	26,029,950
2072	33,424,257,587	557,120,809	557,120,809	0	22,921,531	0	22,921,531
2073	35,667,761,827	522,431,393	522,431,393	0	20,125,759	0	20,125,759



Single Discount Rate Development

Present Values of Projected Benefits

Ending December 31 for 2074 to 2123 (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^((a)-.5)	(g)=(e)*vf^((a)-.5)	(h)=((c)/(1+SDR))^(a-.5)
2074	\$ 38,113,273,595	\$ 488,437,163	\$ 488,437,163	\$ 0	\$ 17,618,156	\$ 0	\$ 17,618,156
2075	40,774,161,772	455,244,864	455,244,864	0	15,375,369	0	15,375,369
2076	43,664,600,334	422,950,111	422,950,111	0	13,375,141	0	13,375,141
2077	46,799,635,693	391,640,833	391,640,833	0	11,596,474	0	11,596,474
2078	50,195,254,170	361,392,602	361,392,602	0	10,019,499	0	10,019,499
2079	53,868,459,095	332,268,017	332,268,017	0	8,625,495	0	8,625,495
2080	57,837,354,456	304,325,980	304,325,980	0	7,397,130	0	7,397,130
2081	62,121,224,413	277,619,077	277,619,077	0	6,318,330	0	6,318,330
2082	66,740,619,718	252,187,766	252,187,766	0	5,374,100	0	5,374,100
2083	71,717,456,481	228,064,175	228,064,175	0	4,550,588	0	4,550,588
2084	77,075,118,145	205,270,862	205,270,862	0	3,835,010	0	3,835,010
2085	82,838,565,184	183,818,932	183,818,932	0	3,215,572	0	3,215,572
2086	89,034,454,302	163,712,640	163,712,640	0	2,681,507	0	2,681,507
2087	95,691,261,456	144,951,335	144,951,335	0	2,223,042	0	2,223,042
2088	102,839,410,875	127,529,311	127,529,311	0	1,831,320	0	1,831,320
2089	110,511,412,996	111,434,116	111,434,116	0	1,498,308	0	1,498,308
2090	118,742,013,562	96,649,387	96,649,387	0	1,216,776	0	1,216,776
2091	127,568,350,205	83,153,721	83,153,721	0	980,217	0	980,217
2092	137,030,120,612	70,920,792	70,920,792	0	782,785	0	782,785
2093	147,169,762,013	59,919,286	59,919,286	0	619,248	0	619,248
2094	158,032,642,948	50,112,160	50,112,160	0	484,920	0	484,920
2095	169,667,268,843	41,455,301	41,455,301	0	375,609	0	375,609
2096	182,125,502,979	33,895,564	33,895,564	0	287,559	0	287,559
2097	195,462,804,512	27,370,488	27,370,488	0	217,418	0	217,418
2098	209,738,482,987	21,809,019	21,809,019	0	162,210	0	162,210
2099	225,015,969,431	17,132,672	17,132,672	0	119,315	0	119,315
2100	241,363,104,683	13,257,602	13,257,602	0	86,450	0	86,450
2101	258,852,445,203	10,096,496	10,096,496	0	61,645	0	61,645
2102	277,561,587,726	7,560,407	7,560,407	0	43,222	0	43,222
2103	297,573,514,099	5,561,032	5,561,032	0	29,767	0	29,767
2104	318,976,957,235	4,013,571	4,013,571	0	20,116	0	20,116
2105	341,866,788,986	2,839,161	2,839,161	0	13,324	0	13,324
2106	366,344,431,904	1,966,274	1,966,274	0	8,640	0	8,640
2107	392,518,297,556	1,331,687	1,331,687	0	5,479	0	5,479
2108	420,504,253,661	880,996	880,996	0	3,394	0	3,394
2109	450,426,122,461	568,692	568,692	0	2,051	0	2,051
2110	482,416,212,925	357,803	357,803	0	1,208	0	1,208
2111	516,615,889,519	219,200	219,200	0	693	0	693
2112	553,176,180,379	130,644	130,644	0	387	0	387
2113	592,258,427,843	75,700	75,700	0	210	0	210
2114	634,034,984,344	42,630	42,630	0	111	0	111
2115	678,689,956,789	23,333	23,333	0	57	0	57
2116	726,420,002,656	12,422	12,422	0	28	0	28
2117	777,435,181,203	6,440	6,440	0	14	0	14
2118	831,959,863,373	3,256	3,256	0	6	0	6
2119	890,233,704,216	1,606	1,606	0	3	0	3
2120	952,512,681,931	771	771	0	1	0	1
2121	1,019,070,207,900	358	358	0	1	0	1
2122	1,090,198,312,460	160	160	0	0	0	0
2123	1,166,208,911,458	95	95	0	0	0	0
Totals					\$ 13,298,236,786	\$ 0	\$ 13,298,236,786



SECTION H

GLOSSARY OF TERMS

Glossary of Terms

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



Glossary of Terms

Amortization Method	The method used to determine the periodic amortization payment may be a level dollar amount, or a level percent of pay amount. The period will typically be expressed in years, and the method will either be “open” (meaning, reset each year) or “closed” (the number of years remaining will decline each year).
Amortization Payment	The amortization payment is the periodic payment required to pay off an interest-discounted amount with payments of interest and principal.
Cost-of-Living Adjustments	Postemployment benefit changes intended to adjust benefit payments for the effects of inflation.
Cost-Sharing Multiple-Employer Defined Benefit Pension Plan (cost-sharing pension plan)	A multiple-employer defined benefit pension plan in which the pension obligations to the employees of more than one employer are pooled and pension plan assets can be used to pay the benefits of the employees of any employer that provides pensions through the pension plan.
Covered-Employee Payroll	The payroll of employees that are provided with pensions through the pension plan.
Deferred Inflows and Outflows	The deferred inflows and outflows of pension resources are amounts used under GASB Statement No. 68 in developing the annual pension expense. Deferred inflows and outflows arise with differences between expected and actual experiences; changes of assumptions. The portion of these amounts not included in pension expense should be included in the deferred inflows or outflows of resources.
Deferred Retirement Option Program (DROP)	A program that permits a plan member to elect a calculation of benefit payments based on service credits and salary, as applicable, as of the DROP entry date. The plan member continues to provide service to the employer and is paid for the service by the employer after the DROP entry date; however, the pensions that would have been paid to the plan member are credited to an individual member account within the defined benefit pension plan until the end of the DROP period. Other variations for DROP exist and will be more fully detailed in the plan provision section of the valuation report.

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

Other Postemployment Benefits (OPEB)	All postemployment benefits other than retirement income (such as death benefits, life insurance, disability, and long-term care) that are provided separately from a pension plan, as well as postemployment healthcare benefits regardless of the manner in which they are provided. Other post-employment benefits do not include termination benefits.
Real Rate of Return	The real rate of return is the rate of return on an investment after adjustment to eliminate inflation.
Service Cost	The service cost is the portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
Total Pension Expense	<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">1. Service Cost2. Interest on the Total Pension Liability3. Current-Period Benefit Changes4. Employee Contributions (made negative for addition here)5. Projected Earnings on Plan Investments (made negative for addition here)6. Pension Plan Administrative Expense7. Other Changes in Plan Fiduciary Net Position8. Recognition of Outflow (Inflow) of Resources due to Liabilities9. Recognition of Outflow (Inflow) of Resources due to Assets
Total Pension Liability (TPL)	The TPL is the portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service.
Unfunded Actuarial Accrued Liability (UAAL)	The UAAL is the difference between actuarial accrued liability and valuation assets.
Valuation Assets	The valuation assets are the assets used in determining the unfunded liability of the plan. For purposes of GASB Statement Nos. 67 and 68, the valuation assets are equal to the market value of assets.