

Wyoming Air Guard Firefighters Retirement System

GASB Statement Nos. 67 and 68 Accounting and Financial
Reporting for Pensions
For Measurement Date as of December 31, 2019





April 19, 2020

Board of Trustees
Wyoming Air Guard Firefighters Retirement System

Dear Board Members:

This report provides information required by the Wyoming Air Guard Firefighters Retirement System (WRS) in connection with the Governmental Accounting Standards Board (GASB) Statement Nos. 67 and Statement No. 68 "Accounting and Financial Reporting for Pensions." 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 Air Guard Firefighters 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. This information was checked for internal consistency, but it was not audited.

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, 2018 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 incorporates the assumptions adopted by the Board effective August 23, 2017. 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. Our experience study report was dated January 10, 2018 and it covered the five-year investigation period ending December 31, 2016.

To the best of our knowledge, the information contained with this report is accurate and fairly represents the actuarial position of the Wyoming Air Guard Firefighters Retirement System. 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.

The signing individuals are independent of the plan sponsor.

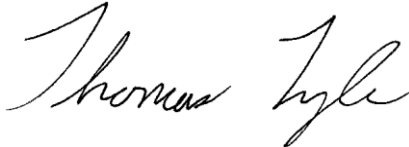
Paul T. Wood and Thomas A. Lyle are members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Respectfully submitted,

Gabriel, Roeder, Smith & Company



By _____
Paul T. Wood, ASA, FCA, MAAA



By _____
Thomas A. Lyle, ASA, EA, MAAA



Table of Contents

	<u>Page</u>
Section A Executive Summary	
Executive Summary	1
Discussion	2-5
Section B Financial Statements	
Statement of Pension Expense under GASB Statement No. 68	7
Statement of Outflows and Inflows Arising from Current Reporting Period	8
History of Deferred Outflows and Inflows of Resources by Source	9
Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods.....	10
Statement of Fiduciary Net Position	11
Statement of Changes in Fiduciary Net Position	12
Section C Required Supplementary Information	
Schedule of Changes in Net Pension Liability and Related Ratios Current Reporting Period.	14
Schedule of Changes in Net Pension Liability and Related Ratios Multiyear	15
Schedule of Net Pension Liability Multiyear	16
Schedule of Contributions Multiyear	17
Notes to Schedule of Contributions	18
Schedule of Investment Returns Multiyear.....	19
Section D Notes to Financial Statements	
Sensitivity of Net Pension Liability to the Single Discount Rate Assumption	21
Summary of Population Statistics	22
Section E Summary of Benefits	24-25
Section F Actuarial Cost Method and Actuarial Assumptions	
Actuarial Assumptions and Cost Method.....	27-31
Experience Analysis	32
Section G Calculation of the Single Discount Rate	
Calculation of the Single Discount Rate	34
Projection of Contributions	35-36
Projection of Plan Net Position	37-38
Present Values of Projected Benefits	39-40
Section H Glossary of Terms	42-45

SECTION A

EXECUTIVE SUMMARY

Executive Summary as of December 31, 2019

	2019	
Actuarial Valuation Date	January 1, 2019	
Measurement Date of the Net Pension Liability	December 31, 2019	
Employer's Fiscal Year Ending Date (Reporting Date)	December 31, 2019	
Membership		
Number of		
- Retirees and Beneficiaries		11
- Inactive, Nonretired Members		5
- Active Members		41
- Total		57
Covered Payroll	\$	2,341,404
Net Pension Liability		
Total Pension Liability	\$	9,441,138
Plan Fiduciary Net Position		8,515,296
Net Pension Liability	\$	925,842
Plan Fiduciary Net Position as a Percentage of Total Pension Liability		90.19 %
Net Pension Liability as a Percentage of Covered Payroll		39.54 %
Development of the Single Discount Rate		
Single Discount Rate		7.00 %
Long-Term Expected Rate of Investment Return		7.00 %
Long-Term Municipal Bond Rate*		2.75 %
Last year ending December 31 in the 2019 to 2118 projection period for which projected benefit payments are fully funded		2118
Total Pension Expense	\$	221,004
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	\$ 408,806	\$ 0
Changes in assumptions	190,989	0
Net difference between projected and actual earnings on pension plan investments	474,061	815,481
Total	\$ 1,073,856	\$ 815,481
<i>*Source: Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of December 31, 2019. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax exempt securities.</i>		



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, 2019.

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 7.00% 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 each year in the future.
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 7.00%. This funding policy results in the expectation that the plan's assets will be able to fully pay for promised benefits through at least 2118. 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, 2019 and a measurement date of December 31, 2019.



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 7.00%; the municipal bond rate is 2.75% (based on the daily rate closest to but not later than the measurement date of the Fidelity "20-Year Municipal GO AA Index"); and the resulting Single Discount Rate is 7.00%.

Effective Date and Transition

GASB 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 Air Guard Firefighters 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, 2019

A. Expense

1. Service Cost	\$	317,202
2. Interest on the Total Pension Liability		624,153
3. Current-Period Benefit Changes		0
4. Employee Contributions (made negative for addition here)		(369,907)
5. Projected Earnings on Plan Investments (made negative for addition here)		(504,756)
6. Pension Plan Administrative Expense		6,972
7. Other Changes in Plan Fiduciary Net Position		327
8. Recognition of Outflow (Inflow) of Resources due to Liabilities		126,867
9. Recognition of Outflow (Inflow) of Resources due to Assets		20,146
10. Total Pension Expense	\$	221,004 *

* 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, 2019

A. Outflows (Inflows) of Resources due to Liabilities

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$	1,751
2. Assumption Changes (gains) or losses	\$	0
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		8.0476
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	\$	218
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	\$	218
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	\$	1,533
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	\$	1,533

B. Outflows (Inflows) of Resources due to Assets

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$	(795,705)
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	\$	(159,141)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$	(636,564)



History of Deferred Outflows and Inflows of Resources by Source

Fiscal Year Ended December 31, 2019

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

Recognition Period	7.6469	8.7180	8.3862	7.7574	7.8568	8.0476		Deferred Net (Inflows)/Outflows at Measurement
	2014	2015	2016	2017	2018	2019	Total	
Total	\$ -	\$ 201,096	\$ 65,370	\$ 272,060	\$ 161,615	\$ 1,751		
2014	-	-	-	-	-	-	-	-
2015	-	23,067	-	-	-	-	23,067	-
2016	-	23,067	7,795	-	-	-	30,862	-
2017	-	23,067	7,795	35,071	-	-	65,933	-
2018	-	23,067	7,795	35,071	20,570	-	86,503	-
2019	-	23,067	7,795	35,071	20,570	218	86,721	-
2020	-	23,067	7,795	35,071	20,570	218	86,721	\$ 408,806
2021	-	23,067	7,795	35,071	20,570	218	86,721	-
2022	-	23,067	7,795	35,071	20,570	218	86,721	-
2023	-	16,560	7,795	35,071	20,570	218	80,214	-
2024	-	-	3,010	26,563	20,570	218	50,361	-
Thereafter	-	-	-	-	17,625	443	18,068	-
	\$ -	\$ 201,096	\$ 65,370	\$ 272,060	\$ 161,615	\$ 1,751	\$ 701,892	

Assumption changes - Net (inflows)/outflows of resources

Recognition Period	7.6469	8.7180	8.3862	7.7574	7.8568	8.0476		
	2014	2015	2016	2017	2018	2019	Total	
Total	\$ -	\$ -	\$ -	\$ 311,427	\$ -	\$ -		
2014	-	-	-	-	-	-	-	-
2015	-	-	-	-	-	-	-	-
2016	-	-	-	-	-	-	-	-
2017	-	-	-	40,146	-	-	40,146	-
2018	-	-	-	40,146	-	-	40,146	-
2019	-	-	-	40,146	-	-	40,146	-
2020	-	-	-	40,146	-	-	40,146	\$ 190,989
2021	-	-	-	40,146	-	-	40,146	-
2022	-	-	-	40,146	-	-	40,146	-
2023	-	-	-	40,146	-	-	40,146	-
2024	-	-	-	30,405	-	-	30,405	-
Thereafter	-	-	-	-	-	-	-	-
	\$ -	\$ -	\$ -	\$ 311,427	\$ -	\$ -	\$ 311,427	

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		
	2014	2015	2016	2017	2018	2019	Total	
Total	\$ 161,568	\$ 525,780	\$ 41,782	\$ (447,294)	\$ 776,171	\$ (795,705)		
2014	32,314	-	-	-	-	-	32,314	-
2015	32,314	105,156	-	-	-	-	137,470	-
2016	32,314	105,156	8,356	-	-	-	145,826	-
2017	32,314	105,156	8,356	(89,459)	-	-	56,367	-
2018	32,312	105,156	8,356	(89,459)	155,234	-	211,599	-
2019	-	105,156	8,356	(89,459)	155,234	(159,141)	20,146	-
2020	-	-	8,358	(89,459)	155,234	(159,141)	(85,008)	\$ (341,420)
2021	-	-	-	(89,458)	155,234	(159,141)	(93,365)	-
2022	-	-	-	-	155,235	(159,141)	(3,906)	-
2023	-	-	-	-	-	(159,141)	(159,141)	-
2024	-	-	-	-	-	-	-	-
Thereafter	-	-	-	-	-	-	-	-
	\$ 161,568	\$ 525,780	\$ 41,782	\$ (447,294)	\$ 776,171	\$ (795,705)	\$ 262,302	

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

	2014	2015	2016	2017	2018	2019	Total	
Total	\$ 161,568	\$ 726,876	\$ 107,152	\$ 136,193	\$ 937,786	\$ (793,954)		
2014	32,314	-	-	-	-	-	32,314	-
2015	32,314	128,223	-	-	-	-	160,537	-
2016	32,314	128,223	16,151	-	-	-	176,688	-
2017	32,314	128,223	16,151	(14,242)	-	-	162,446	-
2018	32,312	128,223	16,151	(14,242)	175,804	-	338,248	-
2019	-	128,223	16,151	(14,242)	175,804	(158,923)	147,013	-
2020	-	23,067	16,153	(14,242)	175,804	(158,923)	41,859	\$ 258,375
2021	-	23,067	7,795	(14,241)	175,804	(158,923)	33,502	-
2022	-	23,067	7,795	75,217	175,805	(158,923)	122,961	-
2023	-	16,560	7,795	75,217	20,570	(158,923)	(38,781)	-
2024	-	-	3,010	56,968	20,570	218	80,766	-
Thereafter	-	-	-	-	17,625	443	18,068	-
	\$ 161,568	\$ 726,876	\$ 107,152	\$ 136,193	\$ 937,786	\$ (793,954)	\$ 1,275,621	



Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods

Fiscal Year Ended December 31, 2019

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	\$ 126,867	\$ 0	\$ 126,867
2. Due to Assets	268,746	248,600	20,146
3. Total	\$ 395,613	\$ 248,600	\$ 147,013

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	\$ 86,721	\$ 0	\$ 86,721
2. Assumption Changes	40,146	0	40,146
3. Net Difference between projected and actual earnings on pension plan investments	268,746	248,600	20,146
4. Total	\$ 395,613	\$ 248,600	\$ 147,013

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	\$ 408,806	\$ 0	\$ 408,806
2. Assumption Changes	190,989	0	190,989
3. Net Difference between projected and actual earnings on pension plan investments	474,061	815,481	(341,420)
4. Total	\$ 1,073,856	\$ 815,481	\$ 258,375

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
2020	\$ 41,859
2021	33,502
2022	122,961
2023	(38,781)
2024	80,766
Thereafter	18,068
Total	\$ 258,375



Statement of Fiduciary Net Position as of December 31, 2019

	2019
Assets	
Cash and Deposits	\$ 601,132
Receivables	
Accounts Receivable - Sale of Investments	\$ 29,842
Accrued Interest and Other Dividends	18,616
Contributions	4,901
Accounts Receivable - Other	185,441
Total Receivables	\$ 238,800
Investments	
Fixed Income	\$ 1,391,310
Equities	3,833,239
Private Markets	1,327,312
Marketable Alternatives	1,376,029
Other	371,631
Total Investments	\$ 8,299,521
Total Assets	\$ 9,139,453
 Liabilities	
Payables	
Accounts Payable - Purchase of Investments	\$ 596,293
Accrued Expenses	27,864
Accounts Payable - Other	0
Total Liabilities	\$ 624,157
 Net Position Restricted for Pensions	\$ 8,515,296

Statement of Changes in Fiduciary Net Position for Year Ended December 31, 2019

	2019
Additions	
Contributions	
Employer	\$ 158,176
Employee	369,907
Other - Employer	0
Other - Employee	0
Total Contributions	\$ 528,083
Investment Income	
Net Appreciation in Fair Value of Investments	\$ 1,230,433
Interest and Dividends	131,451
Less Investment Expense	(61,423)
Net Investment Income	\$ 1,300,461
Other	\$ 0
Total Additions	\$ 1,828,544
 Deductions	
Benefit Payments, including Refunds of Employee Contributions	\$ 512,859
Pension Plan Administrative Expense	6,972
Other	327
Total Deductions	\$ 520,158
Net Increase in Net Position	\$ 1,308,386
 Net Position Restricted for Pensions	
Beginning of Year	\$ 7,206,910
End of Year	\$ 8,515,296

SECTION C

REQUIRED SUPPLEMENTARY INFORMATION

Auditor's Note – This information is intended to assist in preparation of the financial statements of the Wyoming Air Guard Firefighters 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, 2019

A. Total pension liability	
1. Service cost	\$ 317,202
2. Interest on the total pension liability	624,153
3. Changes of benefit terms	0
4. Difference between expected and actual experience of the total pension liability	1,751
5. Changes of assumptions	0
6. Benefit payments, including refunds of employee contributions	(512,859)
7. Net change in total pension liability	<u>430,247</u>
8. Total pension liability – beginning	<u>9,010,891</u>
9. Total pension liability – ending	<u><u>\$ 9,441,138</u></u>
B. Plan fiduciary net position	
1. Contributions – employer	\$ 158,176
2. Contributions – employee	369,907
3. Net investment income	1,300,461
4. Benefit payments, including refunds of employee contributions	(512,859)
5. Pension plan administrative expense	(6,972)
6. Other	(327)
7. Net change in plan fiduciary net position	<u>1,308,386</u>
8. Plan fiduciary net position – beginning	<u>7,206,910</u>
9. Plan fiduciary net position – ending	<u><u>\$ 8,515,296</u></u>
C. Net pension liability	<u><u>\$ 925,842</u></u>
D. Plan fiduciary net position as a percentage of the total pension liability	90.19 %
E. Covered-employee payroll	\$ 2,341,404
F. Net pension liability as a percentage of covered-employee payroll	39.54 %



Schedules of Required Supplementary Information

Schedule of Changes in Net Pension Liability and Related Ratios Multiyear

Last 10 Fiscal Years (which may be built prospectively)

Fiscal year ending December 31,	2019	2018	2017	2016	2015	2014
Total pension liability						
Service cost	\$ 317,202	\$ 294,146	\$ 272,169	\$ 337,474	\$ 331,123	\$ 276,305
Interest on the total pension liability	624,153	599,634	563,514	554,448	517,889	455,677
Changes of benefit terms	0	0	0	0	0	0
Difference between expected and actual experience	1,751	161,615	272,060	65,370	201,096	0
Changes of assumptions	0	0	311,427	0	0	0
Benefit payments, including refunds of employee contributions	(512,859)	(598,879)	(390,843)	(702,598)	(189,069)	(126,427)
Net change in total pension liability	430,247	456,516	1,028,327	254,694	861,039	605,554
Total pension liability - beginning	9,010,891	8,554,375	7,526,048	7,271,354	6,410,315	5,804,761
Total pension liability - ending (a)	\$ 9,441,138	\$ 9,010,891	\$ 8,554,375	\$ 7,526,048	\$ 7,271,354	\$ 6,410,315
Plan fiduciary net position						
Employer contributions	\$ 158,176	\$ 159,583	\$ 156,263	\$ 136,768	\$ 158,319	\$ 142,437
Employee contributions	369,907	445,101	367,485	376,685	405,026	335,763
Pension plan net investment income	1,300,461	(253,859)	902,109	431,043	(55,411)	260,772
Benefit payments, including refunds of employee contributions	(512,859)	(598,879)	(390,843)	(702,598)	(189,069)	(126,427)
Pension plan administrative expense	(6,972)	(7,141)	(6,431)	(5,731)	(4,637)	(4,312)
Other	(327)	(292)	(602)	(301)	(276)	1,085
Net change in plan fiduciary net position	1,308,386	(255,487)	1,027,981	235,866	313,952	609,318
Plan fiduciary net position - beginning	7,206,910	7,462,397	6,434,416	6,198,550	5,884,598	5,275,280
Plan fiduciary net position - ending (b)	\$ 8,515,296	\$ 7,206,910	\$ 7,462,397	\$ 6,434,416	\$ 6,198,550	\$ 5,884,598
Net pension liability - ending (a) - (b)	\$ 925,842	\$ 1,803,981	\$ 1,091,978	\$ 1,091,632	\$ 1,072,804	\$ 525,717
Plan fiduciary net position as a percentage of total pension liability	90.19 %	79.98 %	87.23 %	85.50 %	85.25 %	91.80 %
Covered-employee payroll	\$ 2,341,404	\$ 2,154,544	\$ 1,975,631	\$ 2,151,997	\$ 2,124,296	\$ 1,731,731
Projected valuation payroll	\$ 2,399,940	\$ 2,208,407	\$ 2,059,595	\$ 2,243,456	\$ 2,214,578	\$ 1,805,329
Net pension liability as a percentage of covered-employee payroll	39.54 %	83.73 %	55.27 %	50.73 %	50.50 %	30.36 %

Notes to Schedule:

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

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



Schedules of Required Supplementary Information

Schedule of Net Pension Liability Multiyear

Last 10 Fiscal Years (which may be built prospectively)

FY Ending December 31,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll*	Net Pension Liability as a % of Covered Payroll
2014	\$ 6,410,315	\$ 5,884,598	\$ 525,717	91.80 %	\$ 1,731,731	30.36 %
2015	7,271,354	6,198,550	1,072,804	85.25 %	2,124,296	50.50 %
2016	7,526,048	6,434,416	1,091,632	85.50 %	2,151,997	50.73 %
2017	8,554,375	7,462,397	1,091,978	87.23 %	1,975,631	55.27 %
2018	9,010,891	7,206,910	1,803,981	79.98 %	2,154,544	83.73 %
2019	9,441,138	8,515,296	925,842	90.19 %	2,341,404	39.54 %

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

Schedule of Contributions Multiyear Last 10 Fiscal Years

FY Ending December 31,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll*	Actual Contribution as a % of Covered Payroll
2014	\$ 13,694	\$ 143,582	\$ (129,888)	\$ 1,731,731	8.29 %
2015	3,987	158,319	(154,332)	2,124,296	7.45 %
2016	7,634	136,768	(129,134)	2,151,997	6.36 %
2017	6,011	156,263	(150,252)	1,975,631	7.91 %
2018	11,590	159,583	(147,993)	2,154,544	7.41 %
2019	4,344	158,176	(153,832)	2,341,404	6.76 %

* 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, 2019
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	29 years
Asset Valuation Method	5-Year smoothed market
Inflation	2.25%
Salary Increases	4.75% to 8.75% including inflation
Payroll Growth Rate	2.50%
Cost-of-Living Increase	0.00%
Investment Rate of Return	7.00%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition. Last updated for the 2018 valuation pursuant to an experience study of the period 2012 - 2016.
Post-Retirement Mortality	RP-2014 Healthy Annuitant Mortality Table, fully generational, projected with Scale MP-2017 Males: No set back with a multiplier of 100% Females: No set back with a multiplier of 88%
Pre-Retirement Mortality	RP-2014 Employee Mortality Table, fully generational, projected with Scale MP-2017 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 currently contributing at the rate of 7.12% of salary.
Employees are currently contributing at the rate of 16.25% of salary.
The roll-forward methodology employed for purposes of the GASB disclosures is based on generally accepted actuarial methods.

Schedule of Investment Returns Multiyear Last 10 Fiscal Years

<u>FY Ending December 31,</u>	<u>Annual Return¹</u>
2014	4.70 %
2015	(0.26)%
2016	7.60 %
2017	14.20 %
2018	(3.52)%
2019	18.72 %

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 Air Guard Firefighters 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 7.00% was used to measure the total pension liability. This Single Discount Rate was based on the expected rate of return on pension plan investments of 7.00%. The projection of cash flows used to determine this Single Discount Rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the statutory required 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 7.00%, as well as what the plan's net pension liability would be if it were calculated using a Single Discount Rate that is one percent lower or one percent higher:

Sensitivity of Net Pension Liability to the Single Discount Rate Assumption

1% Decrease	Current Single Discount Rate Assumption	1% Increase
6.00%	7.00%	8.00%
\$ 2,262,809	\$ 925,842	\$ (170,922)

Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	11
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	5
Active Plan Members	<u>41</u>
Total Plan Members	57

SECTION E

SUMMARY OF BENEFITS

Summary of Benefits

Covered Members	Any employees covered by the Air Guard Firefighter Pension Plan (Air Guard Firefighters employees).
Final Average Salary	Employee's average annual salary for the highest paid three continuous years of service.
Service Retirement	
Eligibility	Age 60 with four or more years of service or age 50 with 25 or more years of service. All employees are eligible for a reduced benefit at age 50 with four or more years of service or any age with 25 or more years
Monthly Benefit	2.50% of employee's Final Average Salary for each year of credited service. This amount is reduced by 5.0% per year that the employee is under age 60. However, members who are at least age 55 retiring with a combined age and service of at least 75 receive an unreduced benefit.
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 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	65% of salary 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	16.65% of salary.
Employer	7.12% of salary.
Interest	3.00% annually.



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

Option 1 (normal form)	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 4	Monthly benefit for life with a guarantee of 120 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

Actuarial Assumptions and Cost Method

The following methods and assumptions were used in preparing the January 1, 2019 actuarial valuation report.

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 percent 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 7.00%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account 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 a 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 actuarial accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 30 years from the valuation date. 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

7.00% per year, compounded annually, composed of an assumed 2.25% inflation rate and a 4.75% net real rate of return. This rate represents the assumed return, net of investment expenses.

b. Salary increase rate

Service	Rate	Service	Rate
1	6.50%	14	3.50%
2	6.50%	15	3.25%
3	6.50%	16	3.25%
4	6.00%	17	3.25%
5	5.25%	18	3.25%
6	4.75%	19	3.00%
7	4.25%	20	3.00%
8	4.00%	21	2.75%
9	4.00%	22	2.75%
10	4.00%	23	2.75%
11	3.75%	24	2.75%
12	3.50%	25	2.50%
13	3.50%	25+	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:

RP-2014 Employee Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 100%

Healthy Post-Retirement Mortality:

RP-2014 Healthy Annuitant Mortality Table, fully generational, projected with Scale MP-2017

Males: No set back with a multiplier of 100%

Females: No set back with a multiplier of 88%

Disabled Mortality

RP-2014 Disabled Mortality Table, fully generational, projected with Scale MP-2017

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 2019 using Scale MP-2017					
	Male	Female	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%	0.05%	0.02%
25	0.05%	0.02%	0.06%	0.03%	0.20%	0.09%
30	0.05%	0.02%	0.09%	0.06%	0.51%	0.24%
35	0.06%	0.03%	0.13%	0.09%	0.92%	0.45%
40	0.07%	0.04%	0.19%	0.14%	1.32%	0.68%
45	0.09%	0.06%	0.27%	0.18%	1.63%	0.90%
50	0.16%	0.11%	0.38%	0.24%	1.92%	1.15%
55	0.27%	0.17%	0.55%	0.32%	2.26%	1.45%
60	0.47%	0.25%	0.78%	0.47%	2.67%	1.74%
65	0.83%	0.36%	1.11%	0.70%	3.18%	2.05%
70	1.35%	0.60%	1.63%	1.08%	3.92%	2.69%
75			2.56%	1.76%	5.18%	3.91%
80			4.27%	2.96%	7.31%	5.88%
85			7.44%	5.18%	10.87%	8.80%
90			13.11%	9.20%	16.69%	12.94%
95			21.02%	15.32%	23.77%	19.05%
100			30.49%	23.34%	31.73%	27.24%

b. Disability and Withdrawal

Age	Disability		Withdrawal		Withdrawal		
	Male	Female	Ultimate		Service	First five years	
			Male	Female		Male	Female
20	0.01%	0.01%	11.00%	10.00%	1	22.00%	25.00%
25	0.01%	0.01%	11.00%	10.00%	2	18.00%	21.00%
30	0.01%	0.01%	6.00%	6.00%	3	14.00%	15.00%
35	0.01%	0.01%	5.00%	5.00%	4	13.00%	15.00%
40	0.01%	0.01%	4.00%	5.00%	5	13.00%	14.00%
45	0.03%	0.03%	4.00%	5.00%			
50	0.08%	0.08%	3.00%	4.00%			
55	0.20%	0.20%	3.00%	4.00%			
60	0.20%	0.20%	3.00%	4.00%			

65% of active disabilities are assumed to be duty-related

c. Retirement Rates

Age	Retirement	
	Unreduced	Reduced
<50	13.0%	1.0%
50	13.0%	0.5%
51	13.0%	0.5%
52	18.0%	0.5%
53	15.0%	0.5%
54	15.0%	0.5%
55	25.0%	1.0%
56	30.0%	1.0%
57	28.0%	1.0%
58	25.0%	1.0%
59	25.0%	2.5%
60	15.0%	
61	15.0%	
62	15.0%	
63	15.0%	
64	15.0%	
65	15.0%	
66	15.0%	
67	15.0%	
68	15.0%	
69	15.0%	
70+	100.0%	

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, whichever is more valuable at the time of termination.
- 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.
- f. No benefit amount data is available for members entitled to deferred benefits. The present value of benefits expected to be paid to vested inactive non-retired members is approximated using the data provided.
- g. There will be no recoveries once disabled.
- h. No surviving spouse will remarry.
- i. Administrative expenses: Assumed to be the average of the actual expenses for 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, 2016. 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, 2016 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 7.00%; the municipal bond rate is 2.75%; and the resulting Single Discount Rate is 7.00%.

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

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

The **Projection of Plan 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 2019 to 2068

Year	Payroll for Current		Payroll for Future	Contributions from		Employer	Employer Contributions	Total Contributions
	Employees	Employees	Employees	Current Employees	Current Employees	Contributions for Current Employees	Related to Payroll of Future Employees	
	(a)	(b)=max(0,(c)-(a))	(c)	(d)	(e)=(a)*ER%	(f) = (b)*netER%	(g)=(d)+(e)+(f)	
2019	\$ 2,323,030	\$ 76,910	\$ 2,399,940	\$ 897,990	\$ 149,122	\$ 9,054	\$ 1,056,166	
2020	2,179,994	279,944	2,459,938	362,969	155,216	32,955	551,140	
2021	2,059,759	461,677	2,521,436	342,950	146,655	54,431	544,036	
2022	1,953,494	630,978	2,584,472	325,257	139,089	74,470	538,816	
2023	1,865,702	783,382	2,649,084	310,639	132,838	92,521	535,998	
2024	1,794,289	921,022	2,715,311	298,749	127,753	108,856	535,358	
2025	1,726,567	1,056,627	2,783,194	287,473	122,932	124,977	535,382	
2026	1,654,720	1,198,054	2,852,774	275,511	117,816	141,807	535,134	
2027	1,585,768	1,338,325	2,924,093	264,030	112,907	158,531	535,468	
2028	1,526,717	1,470,478	2,997,195	254,198	108,702	174,313	537,213	
2029	1,479,228	1,592,897	3,072,125	246,291	105,321	188,949	540,561	
2030	1,436,422	1,712,506	3,148,928	239,164	102,273	203,247	544,684	
2031	1,394,857	1,832,794	3,227,651	232,244	99,314	217,599	549,157	
2032	1,352,341	1,956,001	3,308,342	225,165	96,287	232,275	553,727	
2033	1,302,982	2,088,069	3,391,051	216,946	92,772	247,967	557,685	
2034	1,245,251	2,230,576	3,475,827	207,334	88,662	264,875	560,871	
2035	1,179,008	2,383,715	3,562,723	196,305	83,945	283,010	563,260	
2036	1,112,172	2,539,619	3,651,791	185,177	79,187	301,447	565,811	
2037	1,041,814	2,701,272	3,743,086	173,462	74,177	320,562	568,201	
2038	973,983	2,862,680	3,836,663	162,168	69,348	339,694	571,210	
2039	908,461	3,024,119	3,932,580	151,259	64,682	358,902	574,843	
2040	838,004	3,192,891	4,030,895	139,528	59,666	379,053	578,247	
2041	770,276	3,361,391	4,131,667	128,251	54,844	399,271	582,366	
2042	706,060	3,528,899	4,234,959	117,559	50,271	419,478	587,308	
2043	639,826	3,701,007	4,340,833	106,531	45,556	440,312	592,399	
2044	569,428	3,879,926	4,449,354	94,810	40,543	462,042	597,395	
2045	492,701	4,067,887	4,560,588	82,035	35,080	484,922	602,037	
2046	419,115	4,255,488	4,674,603	69,783	29,841	507,813	607,437	
2047	356,752	4,434,716	4,791,468	59,399	25,401	529,734	614,534	
2048	303,840	4,607,415	4,911,255	50,589	21,633	550,871	623,093	
2049	257,635	4,776,401	5,034,036	42,896	18,344	571,525	632,765	
2050	217,498	4,942,389	5,159,887	36,213	15,486	591,762	643,461	
2051	184,011	5,104,873	5,288,884	30,638	13,102	611,536	655,276	
2052	155,032	5,266,074	5,421,106	25,813	11,038	631,120	667,971	
2053	128,957	5,427,677	5,556,634	21,471	9,182	650,716	681,369	
2054	107,444	5,588,106	5,695,550	17,889	7,650	670,138	695,677	
2055	89,650	5,748,289	5,837,939	14,927	6,383	689,500	710,810	
2056	74,477	5,909,410	5,983,887	12,400	5,303	708,950	726,653	
2057	61,900	6,071,584	6,133,484	10,306	4,407	728,504	743,217	
2058	51,677	6,235,144	6,286,821	8,604	3,679	748,215	760,498	
2059	41,643	6,402,349	6,443,992	6,934	2,965	768,356	778,255	
2060	32,000	6,573,092	6,605,092	5,328	2,278	788,916	796,522	
2061	24,530	6,745,689	6,770,219	4,084	1,747	809,694	815,525	
2062	18,953	6,920,521	6,939,474	3,156	1,349	830,737	835,242	
2063	14,548	7,098,413	7,112,961	2,422	1,036	852,141	855,599	
2064	11,473	7,279,312	7,290,785	1,910	817	873,902	876,629	
2065	9,456	7,463,599	7,473,055	1,574	673	896,074	898,321	
2066	7,879	7,652,002	7,659,881	1,312	561	918,746	920,619	
2067	6,333	7,845,045	7,851,378	1,055	451	941,984	943,490	
2068	4,624	8,043,038	8,047,662	770	329	965,822	966,921	



Single Discount Rate Development Projection of Contributions Ending December 31 for 2069 to 2118 (concluded)

Year	Payroll for Current		Payroll for Future		Contributions from		Employer	Employer Contributions	
	Employees	Employees	Total Employee Payroll	Current Employees	Current Employees	Related to Payroll of Future	Total Contributions		
	(a)	(b)=max(0,(c)-(a))	(c)	(d)	(e)=(a)*ER%	(f) = (b)*netER%	(g)=(d)+(e)+(f)		
2069	\$ 3,580	\$ 8,245,274	\$ 8,248,854	\$ 596	\$ 255	\$ 990,176	\$ 991,027		
2070	2,803	8,452,272	8,455,075	467	200	1,015,107	1,015,774		
2071	2,121	8,664,331	8,666,452	353	151	1,040,649	1,041,153		
2072	1,812	8,881,301	8,883,113	302	129	1,066,783	1,067,214		
2073	1,429	9,103,762	9,105,191	238	102	1,093,572	1,093,912		
2074	864	9,331,957	9,332,821	144	62	1,121,044	1,121,250		
2075	330	9,565,812	9,566,142	55	24	1,149,188	1,149,267		
2076	60	9,805,236	9,805,296	10	4	1,177,991	1,178,005		
2077	-	10,050,428	10,050,428	-	-	1,207,480	1,207,480		
2078	-	10,301,689	10,301,689	-	-	1,237,691	1,237,691		
2079	-	10,559,231	10,559,231	-	-	1,268,648	1,268,648		
2080	-	10,823,212	10,823,212	-	-	1,300,372	1,300,372		
2081	-	11,093,792	11,093,792	-	-	1,332,884	1,332,884		
2082	-	11,371,137	11,371,137	-	-	1,366,204	1,366,204		
2083	-	11,655,415	11,655,415	-	-	1,400,352	1,400,352		
2084	-	11,946,800	11,946,800	-	-	1,435,350	1,435,350		
2085	-	12,245,470	12,245,470	-	-	1,471,219	1,471,219		
2086	-	12,551,607	12,551,607	-	-	1,507,983	1,507,983		
2087	-	12,865,397	12,865,397	-	-	1,545,664	1,545,664		
2088	-	13,187,032	13,187,032	-	-	1,584,285	1,584,285		
2089	-	13,516,708	13,516,708	-	-	1,623,871	1,623,871		
2090	-	13,854,626	13,854,626	-	-	1,664,446	1,664,446		
2091	-	14,200,992	14,200,992	-	-	1,706,036	1,706,036		
2092	-	14,556,017	14,556,017	-	-	1,748,668	1,748,668		
2093	-	14,919,917	14,919,917	-	-	1,792,368	1,792,368		
2094	-	15,292,915	15,292,915	-	-	1,837,164	1,837,164		
2095	-	15,675,238	15,675,238	-	-	1,883,082	1,883,082		
2096	-	16,067,119	16,067,119	-	-	1,930,151	1,930,151		
2097	-	16,468,797	16,468,797	-	-	1,978,401	1,978,401		
2098	-	16,880,517	16,880,517	-	-	2,027,859	2,027,859		
2099	-	17,302,530	17,302,530	-	-	2,078,556	2,078,556		
2100	-	17,735,093	17,735,093	-	-	2,130,524	2,130,524		
2101	-	18,178,470	18,178,470	-	-	2,183,792	2,183,792		
2102	-	18,632,932	18,632,932	-	-	2,238,393	2,238,393		
2103	-	19,098,755	19,098,755	-	-	2,294,361	2,294,361		
2104	-	19,576,224	19,576,224	-	-	2,351,728	2,351,728		
2105	-	20,065,630	20,065,630	-	-	2,410,530	2,410,530		
2106	-	20,567,271	20,567,271	-	-	2,470,803	2,470,803		
2107	-	21,081,453	21,081,453	-	-	2,532,582	2,532,582		
2108	-	21,608,489	21,608,489	-	-	2,595,904	2,595,904		
2109	-	22,148,701	22,148,701	-	-	2,660,810	2,660,810		
2110	-	22,702,419	22,702,419	-	-	2,727,337	2,727,337		
2111	-	23,269,979	23,269,979	-	-	2,795,526	2,795,526		
2112	-	23,851,728	23,851,728	-	-	2,865,419	2,865,419		
2113	-	24,448,021	24,448,021	-	-	2,937,057	2,937,057		
2114	-	25,059,222	25,059,222	-	-	3,010,486	3,010,486		
2115	-	25,685,703	25,685,703	-	-	3,085,749	3,085,749		
2116	-	26,327,846	26,327,846	-	-	3,162,893	3,162,893		
2117	-	26,986,042	26,986,042	-	-	3,241,965	3,241,965		
2118	-	27,660,693	27,660,693	-	-	3,323,012	3,323,012		



Single Discount Rate Development Projection of Plan Net Position Ending December 31 for 2019 to 2068

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.00%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2019	\$ 7,462,397	\$ 528,083	\$ 512,859	\$ 7,299	\$ 1,300,461	\$ 8,770,783
2020	8,770,783	551,140	454,816	7,626	617,007	9,476,487
2021	9,476,487	544,036	465,336	7,816	665,793	10,213,164
2022	10,213,164	538,816	480,181	8,012	716,663	10,980,450
2023	10,980,450	535,998	505,492	8,212	769,399	11,772,144
2024	11,772,144	535,358	531,495	8,417	823,893	12,591,483
2025	12,591,483	535,382	564,318	8,628	880,111	13,434,031
2026	13,434,031	535,134	602,880	8,844	937,747	14,295,188
2027	14,295,188	535,468	647,171	9,065	996,508	15,170,928
2028	15,170,928	537,213	687,905	9,291	1,056,460	16,067,405
2029	16,067,405	540,561	717,450	9,524	1,118,304	16,999,297
2030	16,999,297	544,684	744,582	9,762	1,182,737	17,972,375
2031	17,972,375	549,157	769,501	10,006	1,250,140	18,992,164
2032	18,992,164	553,727	795,901	10,256	1,320,766	20,060,500
2033	20,060,500	557,685	826,191	10,512	1,394,635	21,176,117
2034	21,176,117	560,871	861,251	10,775	1,471,622	22,336,584
2035	22,336,584	563,260	901,533	11,044	1,551,542	23,538,809
2036	23,538,809	565,811	943,708	11,321	1,634,324	24,783,915
2037	24,783,915	568,201	986,776	11,604	1,720,072	26,073,808
2038	26,073,808	571,210	1,029,265	11,894	1,808,997	27,412,856
2039	27,412,856	574,843	1,076,659	12,191	1,901,214	28,800,062
2040	28,800,062	578,247	1,128,635	12,496	1,996,637	30,233,815
2041	30,233,815	582,366	1,173,068	12,808	2,095,601	31,725,905
2042	31,725,905	587,308	1,213,540	13,128	2,198,814	33,285,359
2043	33,285,359	592,399	1,259,758	13,457	2,306,550	34,911,093
2044	34,911,093	597,395	1,304,974	13,793	2,418,956	36,608,677
2045	36,608,677	602,037	1,354,625	14,138	2,536,226	38,378,176
2046	38,378,176	607,437	1,403,889	14,491	2,658,569	40,225,803
2047	40,225,803	614,534	1,443,929	14,854	2,786,757	42,168,311
2048	42,168,311	623,093	1,479,892	15,225	2,921,777	44,218,065
2049	44,218,065	632,765	1,505,178	15,606	3,064,710	46,394,755
2050	46,394,755	643,461	1,527,548	15,996	3,216,663	48,711,336
2051	48,711,336	655,276	1,539,447	16,396	3,378,807	51,189,576
2052	51,189,576	667,971	1,533,624	16,805	3,552,907	53,860,024
2053	53,860,024	681,369	1,528,263	17,226	3,740,469	56,736,373
2054	56,736,373	695,677	1,529,025	17,656	3,942,265	59,827,635
2055	59,827,635	710,810	1,528,766	18,098	4,159,167	63,150,748
2056	63,150,748	726,653	1,513,933	18,550	4,392,825	66,737,744
2057	66,737,744	743,217	1,484,538	19,014	4,645,480	70,622,890
2058	70,622,890	760,498	1,449,280	19,489	4,919,232	74,833,850
2059	74,833,850	778,255	1,413,251	19,976	5,215,833	79,394,711
2060	79,394,711	796,522	1,376,208	20,476	5,536,979	84,331,529
2061	84,331,529	815,525	1,336,344	20,988	5,884,565	89,674,287
2062	89,674,287	835,242	1,294,009	21,512	6,260,675	95,454,682
2063	95,454,682	855,599	1,250,123	22,050	6,667,494	101,705,602
2064	101,705,602	876,629	1,204,601	22,601	7,107,330	108,462,359
2065	108,462,359	898,321	1,157,820	23,166	7,582,639	115,762,334
2066	115,762,334	920,619	1,110,538	23,746	8,096,012	123,644,681
2067	123,644,681	943,490	1,063,255	24,339	8,650,169	132,150,745
2068	132,150,745	966,921	1,016,227	24,948	9,247,997	141,324,488



Single Discount Rate Development

Projection of Plan Net Position

Ending December 31 for 2069 to 2118 (concluded)

Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.000%	Projected Ending Plan Net Position
	(a)	(b)	(c)	(d)	(e)	(f)=(a)+(b)-(c)-(d)+(e)
2069	\$ 141,324,488	\$ 991,027	\$ 968,486	\$ 25,571	\$ 9,892,610	\$ 151,214,068
2070	151,214,068	1,015,774	920,605	26,211	10,587,357	161,870,383
2071	161,870,383	1,041,153	872,864	26,866	11,335,793	173,347,600
2072	173,347,600	1,067,214	825,045	27,538	12,141,717	185,703,947
2073	185,703,947	1,093,912	777,902	28,226	13,009,178	199,000,909
2074	199,000,909	1,121,250	731,706	28,932	13,942,472	213,303,992
2075	213,303,992	1,149,267	686,248	29,655	14,946,191	228,683,547
2076	228,683,547	1,178,005	641,247	30,396	16,025,271	245,215,181
2077	245,215,181	1,207,480	596,822	31,156	17,185,002	262,979,686
2078	262,979,686	1,237,691	553,256	31,935	18,431,029	282,063,215
2079	282,063,215	1,268,648	510,728	32,734	19,769,377	302,557,778
2080	302,557,778	1,300,372	469,343	33,552	21,206,484	324,561,739
2081	324,561,739	1,332,884	429,213	34,391	22,749,232	348,180,250
2082	348,180,250	1,366,204	390,459	35,251	24,404,978	373,525,723
2083	373,525,723	1,400,352	353,200	36,132	26,181,588	400,718,330
2084	400,718,330	1,435,350	317,517	37,035	28,087,471	429,886,599
2085	429,886,599	1,471,219	283,487	37,961	30,131,623	461,167,993
2086	461,167,993	1,507,983	251,205	38,910	32,323,664	494,709,526
2087	494,709,526	1,545,664	220,783	39,883	34,673,881	530,668,405
2088	530,668,405	1,584,285	192,361	40,880	37,193,275	569,212,724
2089	569,212,724	1,623,871	166,060	41,902	39,893,609	610,522,242
2090	610,522,242	1,664,446	141,937	42,949	42,787,466	654,789,267
2091	654,789,267	1,706,036	119,988	44,023	45,888,307	702,219,599
2092	702,219,599	1,748,668	100,183	45,124	49,210,540	753,033,500
2093	753,033,500	1,792,368	82,493	46,252	52,769,587	807,466,710
2094	807,466,710	1,837,164	66,905	47,408	56,581,950	865,771,510
2095	865,771,510	1,883,082	53,381	48,593	60,665,290	928,217,909
2096	928,217,909	1,930,151	41,837	49,808	65,038,513	995,094,928
2097	995,094,928	1,978,401	32,155	51,053	69,721,855	1,066,711,976
2098	1,066,711,976	2,027,859	24,199	52,330	74,736,980	1,143,400,286
2099	1,143,400,286	2,078,556	17,809	53,638	80,107,081	1,225,514,476
2100	1,225,514,476	2,130,524	12,798	54,979	85,856,988	1,313,434,211
2101	1,313,434,211	2,183,792	8,963	56,353	92,013,287	1,407,565,974
2102	1,407,565,974	2,238,393	6,108	57,762	98,604,439	1,508,344,937
2103	1,508,344,937	2,294,361	4,044	59,206	105,660,914	1,616,236,961
2104	1,616,236,961	2,351,728	2,598	60,686	113,215,328	1,731,740,733
2105	1,731,740,733	2,410,530	1,617	62,203	121,302,597	1,855,390,040
2106	1,855,390,040	2,470,803	976	63,759	129,960,091	1,987,756,199
2107	1,987,756,199	2,532,582	573	65,353	139,227,807	2,129,450,662
2108	2,129,450,662	2,595,904	328	66,986	149,148,550	2,281,127,802
2109	2,281,127,802	2,660,810	183	68,661	159,768,131	2,443,487,898
2110	2,443,487,898	2,727,337	100	70,377	171,135,570	2,617,280,329
2111	2,617,280,329	2,795,526	53	72,137	183,303,328	2,803,306,993
2112	2,803,306,993	2,865,419	28	73,940	196,327,538	3,002,425,982
2113	3,002,425,982	2,937,057	14	75,789	210,268,269	3,215,555,504
2114	3,215,555,504	3,010,486	7	77,684	225,189,797	3,443,678,096
2115	3,443,678,096	3,085,749	3	79,626	241,160,901	3,687,845,118
2116	3,687,845,118	3,162,893	1	81,616	258,255,179	3,949,181,572
2117	3,949,181,572	3,241,965	0	83,657	276,551,381	4,228,891,261
2118	4,228,891,261	3,323,012	0	85,748	296,133,776	4,528,262,301



Single Discount Rate Development

Present Values of Projected Benefits

Ending December 31 for 2019 to 2068

Year	Projected 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})
2019	\$ 7,462,397	\$ 512,859	\$ 512,859	\$ 0	\$ 495,800	\$ 0	\$ 495,800
2020	8,770,783	454,816	454,816	0	410,923	0	410,923
2021	9,476,487	465,336	465,336	0	392,923	0	392,923
2022	10,213,164	480,181	480,181	0	378,932	0	378,932
2023	10,980,450	505,492	505,492	0	372,810	0	372,810
2024	11,772,144	531,495	531,495	0	366,343	0	366,343
2025	12,591,483	564,318	564,318	0	363,521	0	363,521
2026	13,434,031	602,880	602,880	0	362,955	0	362,955
2027	14,295,188	647,171	647,171	0	364,130	0	364,130
2028	15,170,928	687,905	687,905	0	361,729	0	361,729
2029	16,067,405	717,450	717,450	0	352,583	0	352,583
2030	16,999,297	744,582	744,582	0	341,979	0	341,979
2031	17,972,375	769,501	769,501	0	330,303	0	330,303
2032	18,992,164	795,901	795,901	0	319,285	0	319,285
2033	20,060,500	826,191	826,191	0	309,753	0	309,753
2034	21,176,117	861,251	861,251	0	301,774	0	301,774
2035	22,336,584	901,533	901,533	0	295,222	0	295,222
2036	23,538,809	943,708	943,708	0	288,816	0	288,816
2037	24,783,915	986,776	986,776	0	282,240	0	282,240
2038	26,073,808	1,029,265	1,029,265	0	275,134	0	275,134
2039	27,412,856	1,076,659	1,076,659	0	268,974	0	268,974
2040	28,800,062	1,128,635	1,128,635	0	263,513	0	263,513
2041	30,233,815	1,173,068	1,173,068	0	255,970	0	255,970
2042	31,725,905	1,213,540	1,213,540	0	247,477	0	247,477
2043	33,285,359	1,259,758	1,259,758	0	240,096	0	240,096
2044	34,911,093	1,304,974	1,304,974	0	232,442	0	232,442
2045	36,608,677	1,354,625	1,354,625	0	225,501	0	225,501
2046	38,378,176	1,403,889	1,403,889	0	218,413	0	218,413
2047	40,225,803	1,443,929	1,443,929	0	209,946	0	209,946
2048	42,168,311	1,479,892	1,479,892	0	201,098	0	201,098
2049	44,218,065	1,505,178	1,505,178	0	191,154	0	191,154
2050	46,394,755	1,527,548	1,527,548	0	181,303	0	181,303
2051	48,711,336	1,539,447	1,539,447	0	170,762	0	170,762
2052	51,189,576	1,533,624	1,533,624	0	158,987	0	158,987
2053	53,860,024	1,528,263	1,528,263	0	148,067	0	148,067
2054	56,736,373	1,529,025	1,529,025	0	138,449	0	138,449
2055	59,827,635	1,528,766	1,528,766	0	129,370	0	129,370
2056	63,150,748	1,513,933	1,513,933	0	119,733	0	119,733
2057	66,737,744	1,484,538	1,484,538	0	109,728	0	109,728
2058	70,622,890	1,449,280	1,449,280	0	100,114	0	100,114
2059	74,833,850	1,413,251	1,413,251	0	91,238	0	91,238
2060	79,394,711	1,376,208	1,376,208	0	83,034	0	83,034
2061	84,331,529	1,336,344	1,336,344	0	75,354	0	75,354
2062	89,674,287	1,294,009	1,294,009	0	68,194	0	68,194
2063	95,454,682	1,250,123	1,250,123	0	61,571	0	61,571
2064	101,705,602	1,204,601	1,204,601	0	55,447	0	55,447
2065	108,462,359	1,157,820	1,157,820	0	49,808	0	49,808
2066	115,762,334	1,110,538	1,110,538	0	44,648	0	44,648
2067	123,644,681	1,063,255	1,063,255	0	39,951	0	39,951
2068	132,150,745	1,016,227	1,016,227	0	35,686	0	35,686



Single Discount Rate Development

Present Values of Projected Benefits

Ending December 31 for 2069 to 2118 (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)}
2069	\$ 141,324,488	\$ 968,486	\$ 968,486	\$ 0	\$ 31,784	\$ 0	\$ 31,784
2070	151,214,068	920,605	920,605	0	28,236	0	28,236
2071	161,870,383	872,864	872,864	0	25,021	0	25,021
2072	173,347,600	825,045	825,045	0	22,103	0	22,103
2073	185,703,947	777,902	777,902	0	19,476	0	19,476
2074	199,000,909	731,706	731,706	0	17,121	0	17,121
2075	213,303,992	686,248	686,248	0	15,007	0	15,007
2076	228,683,547	641,247	641,247	0	13,106	0	13,106
2077	245,215,181	596,822	596,822	0	11,400	0	11,400
2078	262,979,686	553,256	553,256	0	9,876	0	9,876
2079	282,063,215	510,728	510,728	0	8,521	0	8,521
2080	302,557,778	469,343	469,343	0	7,318	0	7,318
2081	324,561,739	429,213	429,213	0	6,254	0	6,254
2082	348,180,250	390,459	390,459	0	5,317	0	5,317
2083	373,525,723	353,200	353,200	0	4,495	0	4,495
2084	400,718,330	317,517	317,517	0	3,777	0	3,777
2085	429,886,599	283,487	283,487	0	3,151	0	3,151
2086	461,167,993	251,205	251,205	0	2,610	0	2,610
2087	494,709,526	220,783	220,783	0	2,144	0	2,144
2088	530,668,405	192,361	192,361	0	1,746	0	1,746
2089	569,212,724	166,060	166,060	0	1,408	0	1,408
2090	610,522,242	141,937	141,937	0	1,125	0	1,125
2091	654,789,267	119,988	119,988	0	889	0	889
2092	702,219,599	100,183	100,183	0	694	0	694
2093	753,033,500	82,493	82,493	0	534	0	534
2094	807,466,710	66,905	66,905	0	405	0	405
2095	865,771,510	53,381	53,381	0	302	0	302
2096	928,217,909	41,837	41,837	0	221	0	221
2097	995,094,928	32,155	32,155	0	159	0	159
2098	1,066,711,976	24,199	24,199	0	112	0	112
2099	1,143,400,286	17,809	17,809	0	77	0	77
2100	1,225,514,476	12,798	12,798	0	52	0	52
2101	1,313,434,211	8,963	8,963	0	34	0	34
2102	1,407,565,974	6,108	6,108	0	21	0	21
2103	1,508,344,937	4,044	4,044	0	13	0	13
2104	1,616,236,961	2,598	2,598	0	8	0	8
2105	1,731,740,733	1,617	1,617	0	5	0	5
2106	1,855,390,040	976	976	0	3	0	3
2107	1,987,756,199	573	573	0	1	0	1
2108	2,129,450,662	328	328	0	1	0	1
2109	2,281,127,802	183	183	0	0	0	0
2110	2,443,487,898	100	100	0	0	0	0
2111	2,617,280,329	53	53	0	0	0	0
2112	2,803,306,993	28	28	0	0	0	0
2113	3,002,425,982	14	14	0	0	0	0
2114	3,215,555,504	7	7	0	0	0	0
2115	3,443,678,096	3	3	0	0	0	0
2116	3,687,845,118	1	1	0	0	0	0
2117	3,949,181,572	0	0	0	0	0	0
2118	4,228,891,261	0	0	0	0	0	0
Totals	\$		\$	\$	11,627,708	\$ 0	\$ 11,627,708



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.