

# Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Plan

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

For Measurement Date as of December 31, 2020





March 26, 2021

Board of Trustees  
Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Plan

Dear Board Members:

This report provides information required by the Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Plan (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 Volunteer Firefighter, EMT, and Search and Rescue Pension Plan ("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, 2020 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.

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 Volunteer Firefighter, EMT, and Search and Rescue Pension Plan as of the valuation date.

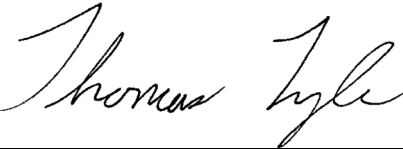
All calculations have been made in conformity with generally accepted actuarial principles and practices as well as with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

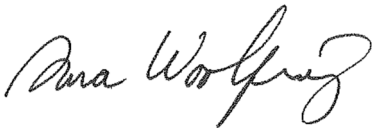
Paul T. Wood, Thomas A. Lyle, and Dana Woolfrey are members of the American Academy of Actuaries (MAAA) and are experienced in performing valuations for public retirement systems. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein. The signing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

Respectfully submitted,

**Gabriel, Roeder, Smith & Company**

By   
\_\_\_\_\_  
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# SECTION A

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## EXECUTIVE SUMMARY

# Executive Summary as of December 31, 2020

	<b>2020</b>
Actuarial Valuation Date	January 1, 2020
Measurement Date of the Net Pension Liability	December 31, 2020
Employer's Fiscal Year Ending Date (Reporting Date)	December 31, 2020

## Membership

Number of	
- Retirees and Beneficiaries	1,555
- Inactive, Nonretired Members	1,996
- Active Members	2,417
- Total	5,968
Covered Payroll	N/A

## Net Pension Liability

Total Pension Liability	\$ 117,836,886
Plan Fiduciary Net Position	94,891,969
Net Pension Liability	\$ 22,944,917
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	80.53 %
Net Pension Liability as a Percentage of Covered Payroll	N/A

## 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*	2.00 %
Last year ending December 31 in the 2020 to 2119 projection period for which projected benefit payments are fully funded	2119

**Total Pension Expense** \$ 1,766,498

## 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	\$ 494,209	\$ 553,453
Changes in assumptions	288,362	0
Net difference between projected and actual earnings on pension plan investments	3,366,663	8,302,688
Total	\$ 4,149,234	\$ 8,856,141

*\*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, 2020. In describing this index, Fidelity notes that the municipal curves are constructed using option-adjusted analytics of a diverse population of over 10,000 tax exempt securities.*



# Discussion

## Accounting Standard

For pension plans that are administered through trusts or equivalent arrangements, Governmental Accounting Standards Board (GASB) Statement No. 67 establishes standards of financial reporting for separately issued financial reports and specifies the required approach for measuring the pension liability. Similarly, GASB Statement No. 68 establishes standards for state and local government employers (as well as non-employer contributing entities) to account for and disclose the net pension liability, pension expense, and other information associated with providing retirement benefits to their employees (and former employees) on their basic financial statements.

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

## Financial Statements

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

Paragraph 34 of GASB Statement No. 68 states, "Contributions to the pension plan from the employer subsequent to the measurement date of the collective net pension liability and before the end of the employer's reporting period should be reported as a deferred outflow of resources related to pensions." The information contained in this report does not incorporate any contributions made to WRS subsequent to the measurement date of December 31, 2020.

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 is expected to decrease for several years before stabilizing to a level dollar amount.
2. The unfunded liability is expected to be fully amortized during the lifetimes of current members.
3. 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 2119. 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, 2020 and a measurement date of December 31, 2020.



## 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 2.00% (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

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### FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Plan. 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, 2020

### A. Expense

1. Service Cost	\$	1,501,573
2. Interest on the Total Pension Liability		7,885,554
3. Current-Period Benefit Changes		0
4. Employee Contributions (made negative for addition here)		(520,788)
5. Projected Earnings on Plan Investments (made negative for addition here)		(6,054,001)
6. Pension Plan Administrative Expense		86,519
7. Other Changes in Plan Fiduciary Net Position		3,290
8. Recognition of Outflow (Inflow) of Resources due to Liabilities		321,275
9. Recognition of Outflow (Inflow) of Resources due to Assets		<u>(1,456,924)</u>
<b>10. Total Pension Expense</b>	<b>\$</b>	<b>1,766,498 *</b>

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



# Statement of Outflows and Inflows Arising from Current Reporting Period

## Fiscal Year Ended December 31, 2020

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

1. Difference between expected and actual experience of the Total Pension Liability (gains) or losses	\$	361,487
2. Assumption Changes (gains) or losses	\$	0
3. Recognition period for Liabilities: Average of the expected remaining service lives of all employees {in years}		3.9911
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	\$	90,573
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	\$	90,573
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	\$	270,914
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	\$	270,914

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

1. Net difference between projected and actual earnings on pension plan investments (gains) or losses	\$	(2,794,755)
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	\$	(558,951)
4. Deferred Outflow (Inflow) of Resources to be recognized in future pension expenses due to Assets	\$	(2,235,804)



# History of Deferred Outflows and Inflows of Resources by Source

## Fiscal Year Ended December 31, 2020

History of Deferred Outflows and Deferred Inflows of Resources by Source

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

Recognition Period	7.2249	3.7588	3.7634	4.2211	4.0727	4.0494	3.9911		Deferred Net (Inflows)/Outflows at Measurement Date
	2014	2015	2016	2017	2018	2019	2020	Total	
<b>Total</b>	\$ -	\$ (211,035)	\$ (479,308)	\$ (3,538,907)	\$ (1,397,503)	\$ 441,209	\$ 361,487		
2014	-	-	-	-	-	-	-	-	-
2015	-	(56,144)	-	-	-	-	-	(56,144)	(56,144)
2016	-	(56,144)	(127,360)	-	-	-	-	(183,504)	(183,504)
2017	-	(56,144)	(127,360)	(838,385)	-	-	-	(1,021,889)	(1,021,889)
2018	-	(42,603)	(127,360)	(838,385)	(343,139)	-	-	(1,351,487)	(1,351,487)
2019	-	-	(97,228)	(838,385)	(343,139)	108,957	-	(1,169,795)	(1,169,795)
2020	-	-	-	(838,385)	(343,139)	108,957	90,573	(981,994)	(981,994)
2021	-	-	-	(185,367)	(343,139)	108,957	90,573	(328,976)	\$ (59,244)
2022	-	-	-	-	(24,947)	108,957	90,573	174,583	174,583
2023	-	-	-	-	-	5,381	89,768	95,149	95,149
2024	-	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-	-
Thereafter	-	-	-	-	-	-	-	-	-
<b>Total</b>	\$ -	\$ (211,035)	\$ (479,308)	\$ (3,538,907)	\$ (1,397,503)	\$ 441,209	\$ 361,487	\$ (4,824,057)	

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

Recognition Period	7.2249	3.7588	3.7634	4.2211	4.0727	4.0494	3.9911		
	2014	2015	2016	2017	2018	2019	2020	Total	
<b>Total</b>	\$ 389,295	\$ (472,252)	\$ -	\$ 5,273,789	\$ -	\$ -	\$ -		
2014	53,882	-	-	-	-	-	-	53,882	53,882
2015	53,882	(125,639)	-	-	-	-	-	(71,757)	(71,757)
2016	53,882	(125,639)	-	-	-	-	-	(71,757)	(71,757)
2017	53,882	(125,639)	-	1,249,387	-	-	-	1,177,630	1,177,630
2018	53,882	(95,335)	-	1,249,387	-	-	-	1,207,934	1,207,934
2019	53,882	-	-	1,249,387	-	-	-	1,303,269	1,303,269
2020	53,882	-	-	1,249,387	-	-	-	1,303,269	1,303,269
2021	12,121	-	-	276,241	-	-	-	288,362	\$ 288,362
2022	-	-	-	-	-	-	-	-	-
2023	-	-	-	-	-	-	-	-	-
2024	-	-	-	-	-	-	-	-	-
2025	-	-	-	-	-	-	-	-	-
Thereafter	-	-	-	-	-	-	-	-	-
<b>Total</b>	\$ 389,295	\$ (472,252)	\$ -	\$ 5,273,789	\$ -	\$ -	\$ -	\$ 5,190,832	

### 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		
	2014	2015	2016	2017	2018	2019	2020	Total	
<b>Total</b>	\$ 2,065,788	\$ 6,323,926	\$ 491,432	\$ (4,929,730)	\$ 8,416,656	\$ (8,468,230)	\$ (2,794,755)		
2014	413,158	-	-	-	-	-	-	413,158	413,158
2015	413,158	1,264,785	-	-	-	-	-	1,677,943	1,677,943
2016	413,158	1,264,785	98,286	-	-	-	-	1,776,229	1,776,229
2017	413,158	1,264,785	98,286	(985,946)	-	-	-	790,283	790,283
2018	413,156	1,264,785	98,286	(985,946)	1,683,331	-	-	2,473,612	2,473,612
2019	-	1,264,786	98,286	(985,946)	1,683,331	(1,693,646)	-	366,811	366,811
2020	-	-	98,288	(985,946)	1,683,331	(1,693,646)	(558,951)	(1,456,924)	(1,456,924)
2021	-	-	-	(985,946)	1,683,331	(1,693,646)	(558,951)	(1,555,212)	\$ (4,936,025)
2022	-	-	-	-	1,683,332	(1,693,646)	(558,951)	(569,265)	(569,265)
2023	-	-	-	-	-	(1,693,646)	(558,951)	(2,252,597)	(2,252,597)
2024	-	-	-	-	-	-	(558,951)	(558,951)	(558,951)
2025	-	-	-	-	-	-	-	-	-
Thereafter	-	-	-	-	-	-	-	-	-
<b>Total</b>	\$ 2,065,788	\$ 6,323,926	\$ 491,432	\$ (4,929,730)	\$ 8,416,656	\$ (8,468,230)	\$ (2,794,755)	\$ 1,105,087	

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

	2014	2015	2016	2017	2018	2019	2020	Total	
<b>Total</b>	\$ 2,455,083	\$ 5,640,639	\$ 12,124	\$ (3,194,848)	\$ 7,019,153	\$ (8,027,021)	\$ (2,433,268)		
2014	467,040	-	-	-	-	-	-	467,040	467,040
2015	467,040	1,083,002	-	-	-	-	-	1,550,042	1,550,042
2016	467,040	1,083,002	(29,074)	-	-	-	-	1,520,968	1,520,968
2017	467,040	1,083,002	(29,074)	(574,944)	-	-	-	946,024	946,024
2018	467,038	1,126,847	(29,074)	(574,944)	1,340,192	-	-	2,330,059	2,330,059
2019	53,882	1,264,786	1,058	(574,944)	1,340,192	(1,584,689)	-	500,285	500,285
2020	53,882	-	98,288	(574,944)	1,340,192	(1,584,689)	(468,378)	(1,135,649)	(1,135,649)
2021	12,121	-	-	(895,072)	1,340,192	(1,584,689)	(468,378)	(1,595,826)	\$ (4,706,907)
2022	-	-	-	-	1,658,385	(1,584,689)	(468,378)	(394,682)	(394,682)
2023	-	-	-	-	-	(1,688,265)	(469,183)	(2,157,448)	(2,157,448)
2024	-	-	-	-	-	-	(558,951)	(558,951)	(558,951)
2025	-	-	-	-	-	-	-	-	-
Thereafter	-	-	-	-	-	-	-	-	-
<b>Total</b>	\$ 2,455,083	\$ 5,640,639	\$ 12,124	\$ (3,194,848)	\$ 7,019,153	\$ (8,027,021)	\$ (2,433,268)	\$ 1,471,862	



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

## Fiscal Year Ended December 31, 2020

### 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	\$ 1,502,799	\$ 1,181,524	\$ 321,275
2. Due to Assets	1,781,619	3,238,543	(1,456,924)
<b>3. Total</b>	<b>\$ 3,284,418</b>	<b>\$ 4,420,067</b>	<b>\$ (1,135,649)</b>

### B. Outflows and Inflows of Resources by Source to be Recognized in Current Pension Expense

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 199,530	\$ 1,181,524	\$ (981,994)
2. Assumption Changes	1,303,269	0	1,303,269
3. Net Difference between projected and actual earnings on pension plan investments	1,781,619	3,238,543	(1,456,924)
<b>4. Total</b>	<b>\$ 3,284,418</b>	<b>\$ 4,420,067</b>	<b>\$ (1,135,649)</b>

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

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows of Resources
1. Differences between expected and actual experience	\$ 494,209	\$ 553,453	\$ (59,244)
2. Assumption Changes	288,362	0	288,362
3. Net Difference between projected and actual earnings on pension plan investments	3,366,663	8,302,688	(4,936,025)
<b>4. Total</b>	<b>\$ 4,149,234</b>	<b>\$ 8,856,141</b>	<b>\$ (4,706,907)</b>

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

Year Ending December 31	Net Deferred Outflows of Resources
2021	\$ (1,595,826)
2022	(394,682)
2023	(2,157,448)
2024	(558,951)
2025	0
Thereafter	0
<b>Total</b>	<b>\$ (4,706,907)</b>



## Statement of Fiduciary Net Position as of December 31, 2020

	<b>2020</b>
<b>Assets</b>	
Cash and Deposits	\$ 2,829,990
Receivables	
Accounts Receivable - Sale of Investments	\$ 183,079
Accrued Interest and Other Dividends	179,559
Contributions	39,110
Accounts Receivable - Other	11,691,265
Total Receivables	\$ 12,093,013
Investments	
Fixed Income	\$ 19,553,628
Equities	45,700,485
Private Markets	8,405,918
Marketable Alternatives	16,632,166
Other	3,520,261
Total Investments	\$ 93,812,458
<b>Total Assets</b>	<b>\$ 108,735,461</b>
 <b>Liabilities</b>	
Payables	
Accounts Payable - Purchase of Investments	\$ 13,665,538
Accrued Expenses	172,652
Accounts Payable - Other	5,302
Total Liabilities	\$ 13,843,492
 <b>Net Position Restricted for Pensions</b>	<b>\$ 94,891,969</b>





## Statement of Changes in Fiduciary Net Position for Year Ended December 31, 2020

	<b>2020</b>
<b>Additions</b>	
Contributions	
Employer	\$ 0
Employee	502,297
Other Employer Contributions	5,509,382
Other Employee Contributions	18,491
<b>Total Contributions</b>	<b>\$ 6,030,170</b>
Investment Income	
Net Appreciation in Fair Value of Investments	\$ 8,185,613
Interest and Dividends	1,185,174
Less Investment Expense	(522,031)
<b>Net Investment Income</b>	<b>\$ 8,848,756</b>
Other	\$ 0
<b>Total Additions</b>	<b>\$ 14,878,926</b>
 <b>Deductions</b>	
Benefit Payments, including Refunds of Employee Contributions	\$ 6,810,666
Pension Plan Administrative Expense	86,519
Other	3,290
<b>Total Deductions</b>	<b>\$ 6,900,475</b>
<b>Net Increase in Net Position</b>	<b>\$ 7,978,451</b>
 <b>Net Position Restricted for Pensions</b>	
Beginning of Year	\$ 86,913,518
End of Year	<b>\$ 94,891,969</b>

## SECTION C

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### **REQUIRED SUPPLEMENTARY INFORMATION**

Auditor's Note – This information is intended to assist in preparation of the financial statements of the Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Plan. 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, 2020

<b>A. Total pension liability</b>		
1. Service cost	\$	1,501,573
2. Interest on the total pension liability		7,885,554
3. Changes of benefit terms		0
4. Difference between expected and actual experience of the total pension liability		361,487
5. Changes of assumptions		0
6. Benefit payments, including refunds of employee contributions		(6,810,666)
<b>7. Net change in total pension liability</b>		<b>2,937,948</b>
<b>8. Total pension liability – beginning</b>		<b>114,898,938</b>
<b>9. Total pension liability – ending</b>	<b>\$</b>	<b>117,836,886</b>
<b>B. Plan fiduciary net position</b>		
1. Contributions – employer	\$	5,509,382
2. Contributions – employee		520,788
3. Net investment income		8,848,756
4. Benefit payments, including refunds of employee contributions		(6,810,666)
5. Pension plan administrative expense		(86,519)
6. Other		(3,290)
<b>7. Net change in plan fiduciary net position</b>		<b>7,978,451</b>
<b>8. Plan fiduciary net position – beginning</b>		<b>86,913,518</b>
<b>9. Plan fiduciary net position – ending</b>	<b>\$</b>	<b>94,891,969</b>
<b>C. Net pension liability</b>	<b>\$</b>	<b>22,944,917</b>
<b>D. Plan fiduciary net position as a percentage of the total pension liability</b>		<b>80.53 %</b>
<b>E. Covered-employee payroll</b>		<b>N/A</b>
<b>F. Net pension liability as a percentage of covered-employee payroll</b>		<b>N/A</b>



## Schedules of Required Supplementary Information

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

Fiscal year ending December 31,	2020	2019	2018	2017	2016	2015
<b>Total pension liability</b>						
Service cost	\$ 1,501,573	\$ 1,432,649	\$ 1,426,154	\$ 1,412,440	\$ 1,285,552	\$ 1,253,883
Interest on the total pension liability	7,885,554	7,685,536	7,474,042	7,372,254	7,761,646	7,520,888
Changes of benefit terms	0	0	0	0	0	21,809,884
Difference between expected and actual experience	361,487	441,209	(1,397,503)	(3,538,907)	(479,308)	(211,035)
Changes of assumptions	0	0	0	5,273,789	0	(472,252)
Benefit payments, including refunds of employee contributions	(6,810,666)	(6,506,775)	(6,145,822)	(5,813,888)	(5,541,861)	(4,867,630)
<b>Net change in total pension liability</b>	<b>2,937,948</b>	<b>3,052,619</b>	<b>1,356,871</b>	<b>4,705,688</b>	<b>3,026,029</b>	<b>25,033,738</b>
<b>Total pension liability - beginning</b>	<b>114,898,938</b>	<b>111,846,319</b>	<b>110,489,448</b>	<b>105,783,760</b>	<b>102,757,731</b>	<b>77,723,993</b>
<b>Total pension liability - ending (a)</b>	<b>\$ 117,836,886</b>	<b>\$ 114,898,938</b>	<b>\$ 111,846,319</b>	<b>\$ 110,489,448</b>	<b>\$ 105,783,760</b>	<b>\$ 102,757,731</b>
<b>Plan fiduciary net position</b>						
Employer contributions	\$ 5,509,382	\$ 3,118,824	\$ 2,959,943	\$ 3,290,994	\$ 3,198,930	\$ 2,238,612
Employee contributions	520,788	437,255	434,522	425,592	459,363	417,406
Pension plan net investment income	8,848,756	13,701,406	(2,782,682)	10,035,753	4,939,925	(675,297)
Benefit payments, including refunds of employee contributions	(6,810,666)	(6,506,775)	(6,145,822)	(5,813,888)	(5,541,861)	(4,867,630)
Pension plan administrative expense	(86,519)	(89,451)	(91,195)	(88,835)	(80,904)	(73,412)
Other	(3,290)	(3,455)	(3,201)	(3,453)	(3,453)	(3,470)
<b>Net change in plan fiduciary net position</b>	<b>7,978,451</b>	<b>10,657,804</b>	<b>(5,628,435)</b>	<b>7,846,163</b>	<b>2,972,000</b>	<b>(2,963,791)</b>
<b>Plan fiduciary net position - beginning</b>	<b>86,913,518</b>	<b>76,255,714</b>	<b>81,884,149</b>	<b>74,037,986</b>	<b>71,065,986</b>	<b>74,029,777</b>
<b>Plan fiduciary net position - ending (b)</b>	<b>\$ 94,891,969</b>	<b>\$ 86,913,518</b>	<b>\$ 76,255,714</b>	<b>\$ 81,884,149</b>	<b>\$ 74,037,986</b>	<b>\$ 71,065,986</b>
<b>Net pension liability - ending (a) - (b)</b>	<b>\$ 22,944,917</b>	<b>\$ 27,985,420</b>	<b>\$ 35,590,605</b>	<b>\$ 28,605,299</b>	<b>\$ 31,745,774</b>	<b>\$ 31,691,745</b>
<b>Plan fiduciary net position as a percentage of total pension liability</b>						
Covered-employee payroll	N/A	N/A	N/A	N/A	N/A	N/A
<b>Net pension liability as a percentage of covered-employee payroll</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

**Notes to Schedule:**

For 2020, 2019, 2018, 2017, 2016 and 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

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
2015	\$ 102,757,731	\$ 71,065,986	\$ 31,691,745	69.16 %	N/A	N/A
2016	105,783,760	74,037,986	31,745,774	69.99 %	N/A	N/A
2017	110,489,448	81,884,149	28,605,299	74.11 %	N/A	N/A
2018	111,846,319	76,255,714	35,590,605	68.18 %	N/A	N/A
2019	114,898,938	86,913,518	27,985,420	75.64 %	N/A	N/A
2020	117,836,886	94,891,969	22,944,917	80.53 %	N/A	N/A



## 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	\$ 1,139,454	\$ 2,238,612	\$ (1,099,158)	N/A	N/A
2016	3,128,272	3,198,930	(70,658)	N/A	N/A
2017	2,923,585	3,290,994	(367,409)	N/A	N/A
2018	3,275,465	2,959,943	315,522	N/A	N/A
2019	3,543,372	3,118,824	424,548	N/A	N/A
2020	3,669,138	5,509,382	(1,840,244)	N/A	N/A

\* The Volunteer Firefighter, EMT, and Search and Rescue Retirement System is a new plan with new benefit provisions formed as of July 1, 2015 from the discontinued prior Volunteer Firemen's Pension Plan and the Volunteer EMT Pension Plan. The Actuarially Determined Contribution for 2015 is the sum of the amounts for the prior plans determined as of their respective January 1, 2015 actuarial valuations.

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



## Notes to Schedule of Contributions

**Valuation Date:** January 1, 2020  
**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 Dollar, Closed
Remaining Amortization Period	27 years
Asset Valuation Method	5-Year smoothed market
Inflation	2.25%
Salary Increases	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** The Volunteer Firefighter, EMT, and Search and Rescue Retirement System is a new plan with new benefit provisions formed as of July 1, 2015 from the discontinued prior Volunteer Firemen's Pension Plan and the Volunteer EMT Pension Plan. The roll-forward methodology employed for purposes of the GASB disclosures is based on generally accepted actuarial methods.



## Schedule of Investment Returns Multiyear Last 10 Fiscal Years

<u>FY Ending December 31,</u>	<u>Annual Return<sup>1</sup></u>
2015	(0.26)%
2016	7.60 %
2017	14.20 %
2018	(3.52)%
2019	18.72 %
2020	11.03 %

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





## SECTION D

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### NOTES TO FINANCIAL STATEMENTS

Auditor's Note – This information is intended to assist in preparation of the financial statements of the Wyoming Volunteer Firefighter, EMT, and Search and Rescue Pension Plan. 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 estimated fire tax rates, projected with inflation. 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 Result

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%
\$ 37,238,578	\$ 22,944,917	\$ 10,738,351



## Summary of Population Statistics

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	1,555
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	1,996
Active Plan Members	<u>2,417</u>
Total Plan Members	5,968



# SECTION E

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## SUMMARY OF BENEFITS

## Summary of Benefits

<b>Covered Members</b>	Any volunteer firefighter, EMT, or search and rescue employee for whom payments are received by the Volunteer Firefighter, EMT, and Search and Rescue pension account as prescribed in W.S. 35-9-621(e).
<b>Service Retirement</b>	
Eligibility	Age 60 with 5 years of service.
Monthly Benefit	\$16 per month for each of the first 10 years of service and \$19 per month for each year of service over 10.  Normal Form of Payment is a 66% Joint & Survivor Annuity for married retirees and life annuity for unmarried retirees.  Any contributing member of the discontinued Volunteer Firefighter Pension Plan and the Volunteer Emergency Medical Technician Pension Plan on June 30, 2015 is grandfathered in certain provisions of the discontinued plans, including receiving the greater of the benefit under the previous plan and the service retirement benefit under this plan.
<b>Vesting</b>	Any member with five or more years of service who has left employment, 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. In addition, a member with at least ten years of service may gain extra years of service by continuing to contribute, up to a maximum number of months served as an active member. A member who terminates with less than five years of service is only eligible for the lump-sum benefit.
<b>Pre-retirement Death Benefit</b>	
Eligibility	No age or service requirements.
Monthly Benefit	Upon the death of any participating member, the board shall authorize a monthly payment to the surviving spouse of the member during the spouse's remaining lifetime of an amount equal to 66% of the amount calculated above based on actual years of service, or five years of service if greater. Benefits are also payable to children under age 21, equal to 33% of the amount calculated above, upon death of the member and spouse.



## Post-retirement Death Benefit

Monthly Benefit 66% of the member's benefit payable prior to the member's death. Benefits are also payable to children under age 21, equal to 33% of the amount calculated above, upon death of the member and spouse.

## Lump Sum Death Benefit

Benefit A lump sum payment of \$5,000, or \$2,500 for members who contributed \$5.00 per month before July 1, 1989, less the amount of the monthly benefits paid to the estate upon the spouse's death. For a deceased member without an eligible survivor, the greater of the deceased member's account or \$5,000 (\$2,500 for certain members) is payable to the estate of the deceased member.

## Contributions

Employee \$15.00 (\$18.75 effective July 1, 2020) per month for volunteer firefighters and EMT  
\$30.00 (\$37.50 effective July 1, 2020) per month for search and rescue members

State Up to 100% of gross fire insurance premium taxes paid on fire insurance policies in Wyoming. Once the funded ratio rises to 107%, contributions may drop to a level no less than 60% of the gross fire insurance premium taxes paid on fire insurance policies in Wyoming.

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.



## **SECTION F**

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

## Summary of Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2020 actuarial valuation report.

### 1. Valuation Date

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

### 2. Actuarial Cost Method

The actuarial valuation uses the Entry Age Normal (EAN) actuarial cost method, amortized as a level dollar amount. Under this method, the employer contribution amount is the sum of (i) the employer normal cost amount, and (ii) the amount 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, and sex. 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, or survivor's benefit. 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 employer contribution amount which, if applied to 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 27 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

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.

5. Demographic Assumptions

a. Rates Before Retirement

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%

Age	Pre-Retirement		Post-Retirement	
	Projected to 2020 using Scale MP-2017			
	Male	Female	Male	Female
20	0.04%	0.02%	0.04%	0.01%
25	0.05%	0.02%	0.06%	0.03%
30	0.05%	0.02%	0.09%	0.06%
35	0.06%	0.03%	0.13%	0.10%
40	0.07%	0.04%	0.19%	0.14%
45	0.09%	0.06%	0.27%	0.18%
50	0.16%	0.11%	0.38%	0.23%
55	0.27%	0.17%	0.55%	0.32%
60	0.47%	0.25%	0.78%	0.47%
65	0.83%	0.36%	1.10%	0.70%
70	1.34%	0.60%	1.62%	1.07%
75			2.54%	1.74%
80			4.23%	2.93%
85			7.37%	5.14%
90			13.01%	9.14%
95			20.87%	15.23%
100			30.32%	23.24%

b. Withdrawal Rates

Age	Withdrawal		Withdrawal		
	Ultimate		Service	First five years	
	Male	Female		Male	Female
20	20.00%	20.00%	1	16.0%	16.0%
25	11.00%	11.00%	2	15.5%	15.5%
30	8.00%	8.00%	3	15.0%	15.0%
35	5.00%	5.00%	4	13.0%	13.0%
40	5.00%	5.00%	5	10.0%	10.0%
45	3.00%	3.00%			
50	2.00%	2.00%			
55	2.00%	2.00%			
60	2.00%	2.00%			

c. Retirement Rates

Age	Rates
<60	0.0%
60	70.0%
61	15.0%
62	15.0%
63	20.0%
64	25.0%
65	25.0%
66	30.0%
67	40.0%
68	40.0%
69	75.0%
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. Administrative expenses: Average of actual expenses for the prior two years, with each year projected at 2.50% to the valuation date.
- e. Decrement timing: Decrements of all types are assumed to occur mid-year.
- f. 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.
- g. Incidence of contributions: Contributions are assumed to be received continuously throughout the year.
- h. Benefit service: All members are assumed to accrue one year of service each year.
- i. Premium tax allocation: Provided by staff and based on booked total premium taxes.
- j. Percent of eligible deferred vested members electing a refund: 25% of all future deferred vested members are assumed to leave their contributions in the fund and elect a deferred vested annuity payable commencing at age 60.
- k. No benefit data is available for members entitled to deferred benefits. The benefit is estimated using the final average compensation and service provided by WRS.

## 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**

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### **CALCULATION OF THE SINGLE DISCOUNT RATE**

## Calculation of the Single Discount Rate

GASB Statement No. 67 includes a specific requirement for the discount rate that is used for the purpose of the measurement of the Total Pension Liability. This rate considers the ability of the Fund to meet benefit obligations in the future. To make this determination, employer contributions, employee contributions, benefit payments, expenses and investment returns are projected into the future. The Plan Net Position (assets) in future years can then be determined and compared to its obligation to make benefit payments in those years. As long as assets are projected to be on hand in a future year, the assumed valuation discount rate is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating (which is published by the Federal Reserve) as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.00%; the municipal bond rate is 2.00%; 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 2020 to 2069

Year	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll	Contributions from Current Employees	Total Employer Contributions	Employer Portion of New Entrant's Normal Cost	Total Contributions
	(a)	(b)=max(0,(c)-(a))	(c)	(d)	(e)	(f)	(g)=(d)+(e)-(f)
2020	N/A	N/A	N/A	\$ 520,788	\$ 5,509,382	\$ -	\$ 6,030,170
2021	-	-	-	365,483	5,571,363	112,761	5,824,085
2022	-	-	-	329,361	5,634,040	199,594	5,763,807
2023	-	-	-	298,411	5,697,423	274,587	5,721,247
2024	-	-	-	271,327	5,761,519	339,417	5,693,429
2025	-	-	-	247,112	5,826,336	398,004	5,675,444
2026	-	-	-	226,644	5,891,883	450,305	5,668,222
2027	-	-	-	209,377	5,958,166	492,065	5,675,479
2028	-	-	-	193,428	6,025,196	529,613	5,689,010
2029	-	-	-	178,056	6,092,979	564,914	5,706,121
2030	-	-	-	164,152	6,161,525	599,406	5,726,271
2031	-	-	-	151,266	6,230,842	627,534	5,754,575
2032	-	-	-	138,962	6,300,939	656,833	5,783,068
2033	-	-	-	127,566	6,371,825	681,524	5,817,867
2034	-	-	-	117,015	6,443,508	706,154	5,854,369
2035	-	-	-	107,605	6,515,997	726,036	5,897,566
2036	-	-	-	98,451	6,589,302	744,620	5,943,133
2037	-	-	-	88,766	6,663,432	762,536	5,989,661
2038	-	-	-	79,574	6,738,396	782,662	6,035,309
2039	-	-	-	71,479	6,814,203	797,262	6,088,419
2040	-	-	-	64,015	6,890,862	811,695	6,143,182
2041	-	-	-	56,857	6,968,385	822,671	6,202,570
2042	-	-	-	49,275	7,046,779	835,246	6,260,807
2043	-	-	-	42,098	7,126,055	847,642	6,320,511
2044	-	-	-	36,101	7,206,223	857,937	6,384,388
2045	-	-	-	30,817	7,287,293	864,740	6,453,371
2046	-	-	-	25,832	7,369,275	871,931	6,523,176
2047	-	-	-	21,839	7,452,180	877,496	6,596,523
2048	-	-	-	18,409	7,536,017	880,440	6,673,986
2049	-	-	-	15,076	7,620,797	883,932	6,751,941
2050	-	-	-	12,340	7,706,531	886,843	6,832,028
2051	-	-	-	10,122	7,793,229	888,154	6,915,198
2052	-	-	-	8,137	7,880,903	889,564	6,999,476
2053	-	-	-	6,468	7,969,563	890,570	7,085,461
2054	-	-	-	5,066	8,059,221	891,381	7,172,906
2055	-	-	-	3,947	8,149,887	892,065	7,261,770
2056	-	-	-	3,065	8,241,573	892,399	7,352,240
2057	-	-	-	2,277	8,334,291	892,832	7,443,736
2058	-	-	-	1,602	8,428,052	893,489	7,536,165
2059	-	-	-	1,137	8,522,867	894,070	7,629,935
2060	-	-	-	816	8,618,750	894,351	7,725,215
2061	-	-	-	538	8,715,711	894,729	7,821,520
2062	-	-	-	347	8,813,762	895,175	7,918,934
2063	-	-	-	235	8,912,917	895,422	8,017,730
2064	-	-	-	154	9,013,188	895,608	8,117,733
2065	-	-	-	97	9,114,586	895,768	8,218,915
2066	-	-	-	58	9,217,125	895,884	8,321,299
2067	-	-	-	32	9,320,818	895,957	8,424,893
2068	-	-	-	16	9,425,677	896,009	8,529,684
2069	-	-	-	8	9,531,716	896,033	8,635,690



# Single Discount Rate Development Projection of Contributions Ending December 31 for 2070 to 2119 (concluded)

Year	Payroll for Current	Payroll for Future	Total Employee	Contributions from	Total Employer	Employer Portion	Total Contributions
	Employees	Employees	Payroll	Current Employees	Contributions	of New Entrant's Normal Cost	
	(a)	(b)=max(0,(c)-(a))	(c)	(d)	(e)	(f)	(g)=(d)+(e)-(f)
2070	\$ -	\$ -	\$ -	\$ 3	\$ 9,638,948	\$ 896,046	\$ 8,742,904
2071	-	-	-	1	9,747,386	896,051	8,851,335
2072	-	-	-	0	9,857,044	896,038	8,961,006
2073	-	-	-	0	9,967,936	896,021	9,071,915
2074	-	-	-	-	10,080,075	896,005	9,184,070
2075	-	-	-	-	10,193,476	895,984	9,297,492
2076	-	-	-	-	10,308,152	895,963	9,412,189
2077	-	-	-	-	10,424,119	895,946	9,528,173
2078	-	-	-	-	10,541,390	895,928	9,645,463
2079	-	-	-	-	10,659,981	895,911	9,764,070
2080	-	-	-	-	10,779,906	895,897	9,884,009
2081	-	-	-	-	10,901,180	895,879	10,005,301
2082	-	-	-	-	11,023,818	895,863	10,127,955
2083	-	-	-	-	11,147,836	895,847	10,251,989
2084	-	-	-	-	11,273,249	895,829	10,377,420
2085	-	-	-	-	11,400,073	895,812	10,504,261
2086	-	-	-	-	11,528,324	895,794	10,632,530
2087	-	-	-	-	11,658,018	895,777	10,762,241
2088	-	-	-	-	11,789,170	895,762	10,893,408
2089	-	-	-	-	11,921,798	895,749	11,026,050
2090	-	-	-	-	12,055,919	895,739	11,160,180
2091	-	-	-	-	12,191,548	895,733	11,295,815
2092	-	-	-	-	12,328,703	895,729	11,432,973
2093	-	-	-	-	12,467,401	895,729	11,571,672
2094	-	-	-	-	12,607,659	895,732	11,711,927
2095	-	-	-	-	12,749,495	895,736	11,853,759
2096	-	-	-	-	12,892,927	895,742	11,997,184
2097	-	-	-	-	13,037,972	895,750	12,142,222
2098	-	-	-	-	13,184,649	895,758	12,288,891
2099	-	-	-	-	13,332,977	895,766	12,437,210
2100	-	-	-	-	13,482,973	895,774	12,587,198
2101	-	-	-	-	13,634,656	895,782	12,738,875
2102	-	-	-	-	13,788,046	895,788	12,892,258
2103	-	-	-	-	13,943,162	895,794	13,047,368
2104	-	-	-	-	14,100,022	895,798	13,204,224
2105	-	-	-	-	14,258,647	895,802	13,362,846
2106	-	-	-	-	14,419,057	895,804	13,523,253
2107	-	-	-	-	14,581,272	895,806	13,685,466
2108	-	-	-	-	14,745,311	895,806	13,849,504
2109	-	-	-	-	14,911,196	895,807	14,015,389
2110	-	-	-	-	15,078,947	895,806	14,183,140
2111	-	-	-	-	15,248,585	895,805	14,352,779
2112	-	-	-	-	15,420,131	895,804	14,524,327
2113	-	-	-	-	15,593,608	895,803	14,697,805
2114	-	-	-	-	15,769,036	895,801	14,873,234
2115	-	-	-	-	15,946,437	895,800	15,050,638
2116	-	-	-	-	16,125,835	895,798	15,230,037
2117	-	-	-	-	16,307,251	895,797	15,411,454
2118	-	-	-	-	16,490,707	895,795	15,594,912
2119	-	-	-	-	16,676,228	895,794	15,780,434





# Single Discount Rate Development Projection of Plan Net Position Ending December 31 for 2020 to 2069

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)
2020	\$ 86,913,518	\$ 6,030,170	\$ 7,045,816	\$ 88,200	\$ 6,045,965	\$ 91,855,637
2021	91,855,637	5,824,085	7,400,816	90,185	6,372,539	96,561,261
2022	96,561,261	5,763,807	7,683,875	92,214	6,690,050	101,239,029
2023	101,239,029	5,721,247	7,977,528	94,289	7,005,853	105,894,312
2024	105,894,312	5,693,429	8,258,901	96,411	7,321,012	110,553,441
2025	110,553,441	5,675,444	8,544,329	98,580	7,636,636	115,222,613
2026	115,222,613	5,668,222	8,779,860	100,798	7,955,049	119,965,226
2027	119,965,226	5,675,479	8,949,982	103,066	8,281,350	124,869,007
2028	124,869,007	5,689,010	9,096,491	105,385	8,619,960	129,976,100
2029	129,976,100	5,706,121	9,246,761	107,756	8,972,793	135,300,497
2030	135,300,497	5,726,271	9,374,071	110,181	9,341,730	140,884,246
2031	140,884,246	5,754,575	9,484,909	112,660	9,729,667	146,770,919
2032	146,770,919	5,783,068	9,583,718	115,195	10,139,228	152,994,302
2033	152,994,302	5,817,867	9,657,320	117,787	10,573,440	159,610,502
2034	159,610,502	5,854,369	9,716,694	120,437	11,035,696	166,663,436
2035	166,663,436	5,897,566	9,738,581	123,147	11,530,041	174,229,316
2036	174,229,316	5,943,133	9,748,761	125,918	12,060,775	182,358,545
2037	182,358,545	5,989,661	9,798,440	128,751	12,629,615	191,050,630
2038	191,050,630	6,035,309	9,835,733	131,648	13,238,249	200,356,808
2039	200,356,808	6,088,419	9,834,899	134,610	13,891,436	210,367,154
2040	210,367,154	6,143,182	9,812,656	137,639	14,594,705	221,154,747
2041	221,154,747	6,202,570	9,787,975	140,736	15,352,623	232,781,228
2042	232,781,228	6,260,807	9,773,322	143,903	16,168,876	245,293,687
2043	245,293,687	6,320,511	9,746,199	147,141	17,047,624	258,768,482
2044	258,768,482	6,384,388	9,669,970	150,452	17,995,567	273,328,014
2045	273,328,014	6,453,371	9,560,111	153,837	19,020,771	289,088,208
2046	289,088,208	6,523,176	9,440,471	157,298	20,130,384	306,143,999
2047	306,143,999	6,596,523	9,279,773	160,837	21,332,220	324,632,132
2048	324,632,132	6,673,986	9,095,765	164,456	22,635,262	344,681,159
2049	344,681,159	6,751,941	8,912,155	168,156	24,047,566	366,400,355
2050	366,400,355	6,832,028	8,699,534	171,940	25,577,852	389,938,761
2051	389,938,761	6,915,198	8,464,516	175,809	27,236,355	415,449,988
2052	415,449,988	6,999,476	8,225,549	179,765	29,033,127	443,077,277
2053	443,077,277	7,085,461	7,972,592	183,810	30,978,560	472,984,897
2054	472,984,897	7,172,906	7,714,676	187,946	33,083,835	505,339,015
2055	505,339,015	7,261,770	7,446,247	192,175	35,360,771	540,323,134
2056	540,323,134	7,352,240	7,171,064	196,499	37,822,092	578,129,904
2057	578,129,904	7,443,736	6,899,587	200,920	40,480,903	618,954,036
2058	618,954,036	7,536,165	6,628,935	205,441	43,350,930	663,006,754
2059	663,006,754	7,629,935	6,352,209	210,063	46,447,209	710,521,626
2060	710,521,626	7,725,215	6,074,053	214,789	49,785,937	761,743,935
2061	761,743,935	7,821,520	5,801,822	219,622	53,384,013	816,928,024
2062	816,928,024	7,918,934	5,531,492	224,563	57,259,382	876,350,286
2063	876,350,286	8,017,730	5,262,946	229,616	61,431,406	940,306,860
2064	940,306,860	8,117,733	5,000,074	234,782	65,920,674	1,009,110,411
2065	1,009,110,411	8,218,915	4,743,010	240,065	70,749,068	1,083,095,319
2066	1,083,095,319	8,321,299	4,492,049	245,466	75,939,983	1,162,619,086
2067	1,162,619,086	8,424,893	4,247,213	250,989	81,518,446	1,248,064,224
2068	1,248,064,224	8,529,684	4,008,426	256,636	87,511,233	1,339,840,079
2069	1,339,840,079	8,635,690	3,775,641	262,410	93,947,001	1,438,384,719



# Single Discount Rate Development

## Projection of Plan Net Position

### Ending December 31 for 2070 to 2119 (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)
2070	\$ 1,438,384,719	\$ 8,742,904	\$ 3,548,867	\$ 268,314	\$ 100,856,415	\$ 1,544,166,857
2071	1,544,166,857	8,851,335	3,328,045	274,351	108,272,286	1,657,688,082
2072	1,657,688,082	8,961,006	3,113,146	280,524	116,229,727	1,779,485,145
2073	1,779,485,145	9,071,915	2,904,212	286,836	124,766,309	1,910,132,321
2074	1,910,132,321	9,184,070	2,701,307	293,290	133,922,230	2,050,244,023
2075	2,050,244,023	9,297,492	2,504,563	299,889	143,740,494	2,200,477,557
2076	2,200,477,557	9,412,189	2,314,176	306,637	154,267,107	2,361,536,040
2077	2,361,536,040	9,528,173	2,130,402	313,536	165,551,278	2,534,171,553
2078	2,534,171,553	9,645,463	1,953,533	320,591	177,645,642	2,719,188,534
2079	2,719,188,534	9,764,070	1,783,883	327,804	190,606,501	2,917,447,417
2080	2,917,447,417	9,884,009	1,621,805	335,180	204,494,073	3,129,868,514
2081	3,129,868,514	10,005,301	1,467,655	342,722	219,372,767	3,357,436,205
2082	3,357,436,205	10,127,955	1,321,755	350,433	235,311,481	3,601,203,453
2083	3,601,203,453	10,251,989	1,184,389	358,318	252,383,911	3,862,296,647
2084	3,862,296,647	10,377,420	1,055,798	366,380	270,668,898	4,141,920,786
2085	4,141,920,786	10,504,261	936,148	374,624	290,250,785	4,441,365,060
2086	4,441,365,060	10,632,530	825,514	383,053	311,219,814	4,762,008,838
2087	4,762,008,838	10,762,241	723,874	391,672	333,672,543	5,105,328,076
2088	5,105,328,076	10,893,408	631,106	400,485	357,712,291	5,472,902,185
2089	5,472,902,185	11,026,050	547,005	409,496	383,449,626	5,866,421,360
2090	5,866,421,360	11,160,180	471,279	418,710	411,002,872	6,287,694,423
2091	6,287,694,423	11,295,815	403,545	428,131	440,498,660	6,738,657,221
2092	6,738,657,221	11,432,973	343,366	437,764	472,072,515	7,221,381,579
2093	7,221,381,579	11,571,672	290,263	447,614	505,869,480	7,738,084,854
2094	7,738,084,854	11,711,927	243,721	457,685	542,044,790	8,291,140,166
2095	8,291,140,166	11,853,759	203,202	467,983	580,764,582	8,883,087,322
2096	8,883,087,322	11,997,184	168,168	478,513	622,206,661	9,516,644,486
2097	9,516,644,486	12,142,222	138,089	489,280	666,561,318	10,194,720,657
2098	10,194,720,657	12,288,891	112,453	500,289	714,032,199	10,920,429,006
2099	10,920,429,006	12,437,210	90,769	511,546	764,837,246	11,697,101,147
2100	11,697,101,147	12,587,198	72,578	523,056	819,209,687	12,528,302,398
2101	12,528,302,398	12,738,875	57,453	534,825	877,399,108	13,417,848,103
2102	13,417,848,103	12,892,258	44,997	546,859	939,672,600	14,369,821,105
2103	14,369,821,105	13,047,368	34,842	559,163	1,006,315,973	15,388,590,441
2104	15,388,590,441	13,204,224	26,652	571,744	1,077,635,073	16,478,831,341
2105	16,478,831,341	13,362,846	20,126	584,608	1,153,957,176	17,645,546,628
2106	17,645,546,628	13,523,253	14,992	597,762	1,235,632,489	18,894,089,616
2107	18,894,089,616	13,685,466	11,009	611,212	1,323,035,754	20,230,188,614
2108	20,230,188,614	13,849,504	7,963	624,964	1,416,567,960	21,659,973,152
2109	21,659,973,152	14,015,389	5,668	639,026	1,516,658,180	23,190,002,027
2110	23,190,002,027	14,183,140	3,968	653,404	1,623,765,537	24,827,293,333
2111	24,827,293,333	14,352,779	2,730	668,106	1,738,381,302	26,579,356,578
2112	26,579,356,578	14,524,327	1,843	683,138	1,861,031,145	28,454,227,069
2113	28,454,227,069	14,697,805	1,222	698,509	1,992,277,541	30,460,502,684
2114	30,460,502,684	14,873,234	794	714,225	2,132,722,344	32,607,383,244
2115	32,607,383,244	15,050,638	506	730,295	2,283,009,545	34,904,712,626
2116	34,904,712,626	15,230,037	316	746,727	2,443,828,215	37,363,023,835
2117	37,363,023,835	15,411,454	193	763,528	2,615,915,668	39,993,587,237
2118	39,993,587,237	15,594,912	115	780,707	2,800,060,830	42,808,462,157
2119	42,808,462,157	15,780,434	99	798,273	2,997,107,854	45,820,552,073



# Single Discount Rate Development

## Present Values of Projected Benefits

### Ending December 31 for 2020 to 2069

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)
2020	\$ 86,913,518	\$ 7,045,816	\$ 7,045,816	\$ 0	\$ 6,811,447	\$ 0	\$ 6,811,447
2021	91,855,637	7,400,816	7,400,816	0	6,686,578	0	6,686,578
2022	96,561,261	7,683,875	7,683,875	0	6,488,149	0	6,488,149
2023	101,239,029	7,977,528	7,977,528	0	6,295,426	0	6,295,426
2024	105,894,312	8,258,901	8,258,901	0	6,091,093	0	6,091,093
2025	110,553,441	8,544,329	8,544,329	0	5,889,348	0	5,889,348
2026	115,222,613	8,779,860	8,779,860	0	5,655,787	0	5,655,787
2027	119,965,226	8,949,982	8,949,982	0	5,388,201	0	5,388,201
2028	124,869,007	9,096,491	9,096,491	0	5,118,136	0	5,118,136
2029	129,976,100	9,246,761	9,246,761	0	4,862,322	0	4,862,322
2030	135,300,497	9,374,071	9,374,071	0	4,606,792	0	4,606,792
2031	140,884,246	9,484,909	9,484,909	0	4,356,320	0	4,356,320
2032	146,770,919	9,583,718	9,583,718	0	4,113,740	0	4,113,740
2033	152,994,302	9,657,320	9,657,320	0	3,874,143	0	3,874,143
2034	159,610,502	9,716,694	9,716,694	0	3,642,954	0	3,642,954
2035	166,663,436	9,738,581	9,738,581	0	3,412,300	0	3,412,300
2036	174,229,316	9,748,761	9,748,761	0	3,192,399	0	3,192,399
2037	182,358,545	9,798,440	9,798,440	0	2,998,754	0	2,998,754
2038	191,050,630	9,835,733	9,835,733	0	2,813,240	0	2,813,240
2039	200,356,808	9,834,899	9,834,899	0	2,628,974	0	2,628,974
2040	210,367,154	9,812,656	9,812,656	0	2,451,428	0	2,451,428
2041	221,154,747	9,787,975	9,787,975	0	2,285,292	0	2,285,292
2042	232,781,228	9,773,322	9,773,322	0	2,132,589	0	2,132,589
2043	245,293,687	9,746,199	9,746,199	0	1,987,543	0	1,987,543
2044	258,768,482	9,669,970	9,669,970	0	1,842,988	0	1,842,988
2045	273,328,014	9,560,111	9,560,111	0	1,702,851	0	1,702,851
2046	289,088,208	9,440,471	9,440,471	0	1,571,533	0	1,571,533
2047	306,143,999	9,279,773	9,279,773	0	1,443,722	0	1,443,722
2048	324,632,132	9,095,765	9,095,765	0	1,322,518	0	1,322,518
2049	344,681,159	8,912,155	8,912,155	0	1,211,048	0	1,211,048
2050	366,400,355	8,699,534	8,699,534	0	1,104,818	0	1,104,818
2051	389,938,761	8,464,516	8,464,516	0	1,004,646	0	1,004,646
2052	415,449,988	8,225,549	8,225,549	0	912,414	0	912,414
2053	443,077,277	7,972,592	7,972,592	0	826,500	0	826,500
2054	472,984,897	7,714,676	7,714,676	0	747,442	0	747,442
2055	505,339,015	7,446,247	7,446,247	0	674,238	0	674,238
2056	540,323,134	7,171,064	7,171,064	0	606,842	0	606,842
2057	578,129,904	6,899,587	6,899,587	0	545,672	0	545,672
2058	618,954,036	6,628,935	6,628,935	0	489,969	0	489,969
2059	663,006,754	6,352,209	6,352,209	0	438,799	0	438,799
2060	710,521,626	6,074,053	6,074,053	0	392,135	0	392,135
2061	761,743,935	5,801,822	5,801,822	0	350,056	0	350,056
2062	816,928,024	5,531,492	5,531,492	0	311,912	0	311,912
2063	876,350,286	5,262,946	5,262,946	0	277,354	0	277,354
2064	940,306,860	5,000,074	5,000,074	0	246,263	0	246,263
2065	1,009,110,411	4,743,010	4,743,010	0	218,319	0	218,319
2066	1,083,095,319	4,492,049	4,492,049	0	193,241	0	193,241
2067	1,162,619,086	4,247,213	4,247,213	0	170,755	0	170,755
2068	1,248,064,224	4,008,426	4,008,426	0	150,612	0	150,612
2069	1,339,840,079	3,775,641	3,775,641	0	132,585	0	132,585



# Single Discount Rate Development

## Present Values of Projected Benefits

### Ending December 31 for 2070 to 2119 (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)
2070	\$ 1,438,384,719	\$ 3,548,867	\$ 3,548,867	\$ 0	\$ 116,469	\$ 0	\$ 116,469
2071	1,544,166,857	3,328,045	3,328,045	0	102,076	0	102,076
2072	1,657,688,082	3,113,146	3,113,146	0	89,238	0	89,238
2073	1,779,485,145	2,904,212	2,904,212	0	77,803	0	77,803
2074	1,910,132,321	2,701,307	2,701,307	0	67,633	0	67,633
2075	2,050,244,023	2,504,563	2,504,563	0	58,605	0	58,605
2076	2,200,477,557	2,314,176	2,314,176	0	50,607	0	50,607
2077	2,361,536,040	2,130,402	2,130,402	0	43,541	0	43,541
2078	2,534,171,553	1,953,533	1,953,533	0	37,314	0	37,314
2079	2,719,188,534	1,783,883	1,783,883	0	31,844	0	31,844
2080	2,917,447,417	1,621,805	1,621,805	0	27,057	0	27,057
2081	3,129,868,514	1,467,655	1,467,655	0	22,883	0	22,883
2082	3,357,436,205	1,321,755	1,321,755	0	19,260	0	19,260
2083	3,601,203,453	1,184,389	1,184,389	0	16,130	0	16,130
2084	3,862,296,647	1,055,798	1,055,798	0	13,438	0	13,438
2085	4,141,920,786	936,148	936,148	0	11,135	0	11,135
2086	4,441,365,060	825,514	825,514	0	9,177	0	9,177
2087	4,762,008,838	723,874	723,874	0	7,521	0	7,521
2088	5,105,328,076	631,106	631,106	0	6,128	0	6,128
2089	5,472,902,185	547,005	547,005	0	4,964	0	4,964
2090	5,866,421,360	471,279	471,279	0	3,997	0	3,997
2091	6,287,694,423	403,545	403,545	0	3,199	0	3,199
2092	6,738,657,221	343,366	343,366	0	2,544	0	2,544
2093	7,221,381,579	290,263	290,263	0	2,009	0	2,009
2094	7,738,084,854	243,721	243,721	0	1,577	0	1,577
2095	8,291,140,166	203,202	203,202	0	1,229	0	1,229
2096	8,883,087,322	168,168	168,168	0	950	0	950
2097	9,516,644,486	138,089	138,089	0	729	0	729
2098	10,194,720,657	112,453	112,453	0	555	0	555
2099	10,920,429,006	90,769	90,769	0	419	0	419
2100	11,697,101,147	72,578	72,578	0	313	0	313
2101	12,528,302,398	57,453	57,453	0	231	0	231
2102	13,417,848,103	44,997	44,997	0	169	0	169
2103	14,369,821,105	34,842	34,842	0	123	0	123
2104	15,388,590,441	26,652	26,652	0	88	0	88
2105	16,478,831,341	20,126	20,126	0	62	0	62
2106	17,645,546,628	14,992	14,992	0	43	0	43
2107	18,894,089,616	11,009	11,009	0	30	0	30
2108	20,230,188,614	7,963	7,963	0	20	0	20
2109	21,659,973,152	5,668	5,668	0	13	0	13
2110	23,190,002,027	3,968	3,968	0	9	0	9
2111	24,827,293,333	2,730	2,730	0	6	0	6
2112	26,579,356,578	1,843	1,843	0	4	0	4
2113	28,454,227,069	1,222	1,222	0	2	0	2
2114	30,460,502,684	794	794	0	1	0	1
2115	32,607,383,244	506	506	0	1	0	1
2116	34,904,712,626	316	316	0	0	0	0
2117	37,363,023,835	193	193	0	0	0	0
2118	39,993,587,237	115	115	0	0	0	0
2119	42,808,462,157	99	99	0	0	0	0
<b>Totals</b>	<b>\$ 123,503,331</b>	<b>\$ 0</b>	<b>\$ 123,503,331</b>	<b>\$ 0</b>	<b>\$ 0</b>	<b>\$ 0</b>	<b>\$ 123,503,331</b>



# SECTION H

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## GLOSSARY OF TERMS

# Glossary of Terms

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



## Glossary of Terms

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

# Glossary of Terms

## Discount Rate

For GASB purposes, the discount rate is the single rate of return that results in the present value of all projected benefit payments to be equal to the sum of the funded and unfunded projected benefit payments, specifically:

1. The benefit payments to be made while the pension plans' fiduciary net position is projected to be greater than the benefit payments that are projected to be made in the period; and
2. The present value of the benefit payments not in (1) above, discounted using the municipal bond rate.

## Entry Age Actuarial Cost Method (EAN)

The EAN is a cost method for allocating the costs of the plan between the normal cost and the accrued liability. The actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis (either level dollar or level percent of pay) over the earnings or service of the individual between entry age and assumed exit ages(s). The portion of the actuarial present value allocated to a valuation year is the normal cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future normal costs is the actuarial accrued liability. The sum of the accrued liability plus the present value of all future normal costs is the present value of all benefits.

## Fiduciary Net Position

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

## GASB

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

## Money-Weighted Rate of Return

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

## Multiple-Employer Defined Benefit Pension Plan

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

## Municipal Bond Rate

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

## Net Pension Liability (NPL)

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





## Glossary of Terms

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