

**WYOMING VOLUNTEER FIREFIGHTER AND EMERGENCY  
MEDICAL TECHNICIAN PENSION FUND**

ACTUARIAL VALUATION REPORT

FOR THE YEAR BEGINNING JANUARY 1, 2016

April 28, 2016

Board of Trustees  
**Wyoming Volunteer Firefighter and Emergency Medical Technician Pension Fund**  
6101 Yellowstone Road  
Suite 500  
Cheyenne, WY 82002

Dear Board of Trustees:

**Subject: Actuarial Valuation as of January 1, 2016**

We are pleased to present the report of the actuarial valuation of the Wyoming Volunteer Firefighter and Emergency Medical Technician Pension Fund (“the Fund”) for the plan year commencing January 1, 2016. This report describes the current actuarial condition of the Fund and determines the calculated employer contribution amount (the actuarially determined contribution amount). Valuations are prepared annually, as of January 1, the first day of the Fund’s plan year. Since this is a new plan established as of July 1, 2015, this is the first valuation of the fund.

### **Financing objectives and funding policy**

The employee contribution amounts are specified in statute. The state treasurer shall deposit into the Fund 70% of the gross tax levied upon fire insurance premiums paid to insurance companies for fire insurance in the state. The purpose of this actuarial valuation is to determine whether or not these contribution amounts are sufficient to meet the obligations of the Fund.

### **Progress toward realization of financing objectives**

The funded ratio (the ratio of the actuarial value of assets to the actuarial accrued liability) is a standard measure of a plan’s funded status. The funded ratio, based upon the assumption of no future cost-of-living adjustments as of January 1, 2016 is 74.40%. On a market value of assets basis, the funded ratio is 69.48% as of January 1, 2016.

### **Benefit provisions**

This is a newly established fund as of July 1, 2015, created under House Bill 72 of the 2015 General Session, which replaces the Volunteer Firemen’s Pension Fund and the Volunteer Firefighter Emergency Medical Technician Pension Fund. The benefit provisions reflected in this valuation are those which were in effect on January 1, 2016. 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. Therefore, this valuation does not include any liability for future cost-of-living increases.

The benefit provisions are summarized in Appendix B of the report.

### **Assumptions and methods**

Actuarial assumptions and methods are set by the Board, based upon recommendations made by the plan's actuary.

The results of the actuarial valuation are dependent upon the actuarial assumptions used. Actual results can and almost certainly will differ, as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution amounts and funding periods. The actuarial calculations presented in the report are intended to provide information for rational decision making.

The employer contribution requirement in Table 1 of this report is determined using the actuarial assumptions and methods disclosed in Appendix A of this report. This report does not include a detailed assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. We encourage a review and assessment of investment and other significant risks that may have a material effect on the plan's financial condition.

All assumptions and methods are described in Appendix A of the report.

### **Data**

Member data for retired, active and inactive members was supplied as of January 1, 2016 by the Fund's staff. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data.

Asset and financial information as of January 1, 2016 was prepared by Wyoming Retirement System and is the responsibility of management. Eide Bailly, LLP provided us the asset and financial information and will opine on Wyoming Retirement System's statements.

### **Plan experience**

As part of each valuation, we examine the Fund's experience relative to the assumptions. As experience in a given year deviates from the assumptions, a gain occurs if the liabilities grow slower than the assumption set anticipates and a loss occurs if the liabilities grow faster. Since this is the first year of the new plan, we have not included an analysis of the experience of the past year. An examination of the experience will be included in next year's valuation.

### **Actuarial certification**

All of the tables contained in this actuarial valuation report were prepared by Gabriel, Roeder, Smith & Company. We certify that the information presented herein is accurate and fairly portrays the actuarial position of the Fund as of January 1, 2016.

All of our work conforms with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of state law and, where applicable, the Internal Revenue Code and ERISA. The undersigned are independent actuaries and consultants. Leslie Thompson is an Enrolled Actuarial and Leslie Thompson and Paul Wood are members of the American Academy of Actuaries, and meet all the Qualification Standards of the American Academy of Actuaries. Finally, all of the undersigned are experienced in performing valuations for large public retirement systems.

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Respectfully submitted,

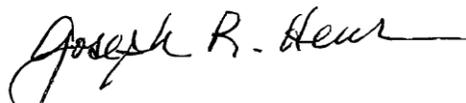
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## **SECTION I**

### **EXECUTIVE SUMMARY**

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Executive Summary

Item	January 1, 2016
	No COLA
1. Contributions:	
a. Total normal cost	\$1,285,552
b. Employee contributions	(428,220)
c. Other expected contributions	-
d. Net employer normal cost	\$857,332
e. Amortization payment	2,187,240
f. Administrative expenses	83,700
g. Required contribution	\$3,128,272
h. Estimated premium tax allocation*	(3,100,000)
i. Shortfall/(surplus)	\$28,272
2. Funding Elements:	
a. Market value of assets (MVA)	\$71,065,986
b. Actuarial value of assets (AVA)	\$76,097,619
c. Actuarial accrued liability (AAL)	\$102,278,423
d. Unfunded/(overfunded) actuarial accrued liability (UAAL)	\$26,180,804
3. Contributions and Ratios:	
a. Annual required contribution	\$3,128,272
b. Actual contributions	N/A
i. Employer	N/A
ii. Other	N/A
c. Percentage contributed	N/A
d. Funded ratio on an actuarial basis (AVA/AAL)	74.40%
e. Funded ratio on a market basis (MVA/AAL)	69.48%

\* The premium tax is equal to 70% of the gross fire insurance premium taxes from fire insurance policies written in Wyoming on or after July 1, 2015. The premium tax for 2016 has been estimated based on the premium tax paid for 2014 and prorated for the change in legislation regarding the tax base used to determine the premium taxes plus the portion allocated to this fund.

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## **SECTION II**

### DISCUSSION

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## Contribution Requirements

- Exhibits throughout this report are based primarily, unless stated otherwise, on the assumption of no future cost-of-living adjustments (COLA)
- 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. The actuarial value funded ratio is 74.40% and the market value funded ratio is 69.48%.
- The estimated State premium tax allocation is \$3.1 million this year, as estimated based on the actual premium tax paid for 2014 and prorated for the change in legislation regarding the tax base used to determine the premium taxes plus the portion allocated to this fund.
- The amortization payment is based upon the following assumptions:
  - 30-year open funding period
  - Amortization payment amounts are calculated in such a way that they will remain level as a dollar amount.
  - Future growth in the number of active members is not reflected in the annual valuation
- The calculated funding period assuming an annual contribution of \$3.1 million is 31.6 years.
- This is the first valuation of the merged plan. Benefit provisions effective July 1, 2015, as authorized by new legislation in HB 72 of the 2015 General Assembly, are summarized in Appendix B.
- There are changes to the actuarial methods since the prior valuations. The Volunteer Emergency Medical Technician Pension Fund used a 10 year amortization period. This valuation of the new merged plan uses a 30 year amortization period.

## Calculation of Contribution Amounts

The funds available to pay benefits come from two sources, contributions and investment income on those contributions (the majority of the funds available to pay benefits typically come from investment income). The Fund receives contributions from two primary sources, state contributions equal to 70% of gross fire insurance premium taxes and member contributions of \$15.00 per month per member. In addition, the prior EMT “set-aside” funds were transferred to this plan. As shown in Table 1 under Section III of the report, the calculated employer contribution amount has three components:

- The normal cost (NC)
- The amortization payment
- The administrative expenses

The NC is the theoretical amount which would be required to pay the members’ benefits if this amount had been contributed from each member’s entry date and if the fund’s experience exactly followed the actuarial assumptions. The NC is shown in Table 1 under Section III of the report.

The actuarial accrued liability (AAL) is the difference between (i) the actuarial present value of all future benefits for all current participants of the fund, including active, inactive and retired members, and (ii) the actuarial present value of future normal costs. Thus the AAL represents the liability associated with past years. The unfunded actuarial accrued liability (UAAL) is the difference between the AAL and the actuarial value of assets (AVA). It is the shortfall/excess between the liability associated with prior years (the AAL) and the assets actually accumulated (the AVA). This shortfall/excess can arise from several sources, including actuarial gains and losses which are caused by differences between actual experience and the plan’s assumptions, changes to the plan’s actuarial assumptions, and amendments to the benefit provisions.

The amortization payment is the amount required to fund this difference. It is the amount, expressed as a level dollar amount, necessary to amortize the UAAL. This amortization is over a period of 30 years.

Administrative expenses are the average of the actual expenses for the prior two years, with each year projected at 6.50% to the valuation date.

The calculated amount is used in determining the contributions necessary to meet the Actuarially Determined Contribution for the twelve-month period beginning January 1, 2016.

## Financial Data and Experience

As of January 1, 2016, the Fund has a total market value of \$71 million. Financial information was received from Eide Bailly, LLP.

Table 5 under Section III of the report shows a reconciliation of the market values between the beginning and end of 2015.

During 2015, the total investment return on the market value of assets (MVA), as reported by NEPC, LLC, was (0.26%), as shown in Table 8 under Section III of the report.

In determining the contribution rates and funded status of the Fund, an actuarial value of assets (AVA) is used rather than the market 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 (or less than) expected investment income. 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.

This is a new fund established as of July 1, 2015 where the initial market value of assets includes the total amounts from the two prior funds which have been rolled into this fund. Since the new plan has greater contributions and benefit payments than the combined amounts under the prior discontinued plans, the actuarial value of assets has been reinitialized to the market value of assets as of January 1, 2015.

The development of the AVA is shown in Table 7 under Section III of the report. The AVA is \$76 million. The AVA is 107.08% of the MVA as of December 31, 2015.

In addition to the market return, Table 8 also shows the return on the actuarial value of assets for the Fund. For 2015, this return was 6.03% which is less than the assumed 7.75% investment return.

## Member Data

Member data as of January 1, 2016 was supplied electronically by the Fund's staff. While we did not audit this data, we did perform various tests to ensure that it was internally consistent, consistent with the prior year's data, and was reasonable overall.

Table 12 under Section III of the report shows the number of members by category (active, inactive, retired, etc.) along with member statistics. Tables 13 through 21 show summaries of certain historical data and include membership statistics.

Of the 2,379 active participants, 129 are eligible or will become eligible for retirement in 2016.

## Benefit Provisions

Appendix B of the report includes a more detailed summary of the benefit provisions for the Fund. These are the benefit provisions in effect January 1, 2016, per HB 72 as passed by the Wyoming General Assembly in the 2015 general session. A brief summary is as follows:

- *Normal Retirement Eligibility*
  - Age 60 with 5 years of service
- *Normal Retirement Benefit*
  - \$16 per month for each of the first 10 years of service and \$19 per month for each year of service over 10
- *Spouse Benefits*
  - 66.67% of the member's benefit payable prior to the member's death
- *Employee Contributions* are required
  - \$15 per month
- *Post-retirement Cost-of-Living Adjustments (COLAs)*
  - 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.

## Actuarial Methods and Assumptions

Appendix A of the report includes a summary of the actuarial assumptions and methods used in this valuation. A few highlights are listed as follows:

- Costs are determined using the Entry Age Normal actuarial cost method, calculated as a level dollar amount.
- The unfunded actuarial accrued liability is amortized over an open 30 year period as a level dollar amount.
- The assumed annual investment return rate is 7.75%, with assumed inflation of 3.25%.
- Inactive vested participants are assumed to retire at normal retirement eligibility or the valuation date if already eligible to retire.
- No benefit 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.

The average future lifetime for current pensioners is 15.7 years.

There have been changes in actuarial assumptions since the prior valuations. Under the new benefit provisions, members are eligible for a deferred vested annuity upon termination. Previously, terminated members were only eligible for a refund of their contributions. This valuation includes an assumption that 75% of future deferred vested members will elect a refund of contributions and 25% will elect the deferred annuity.

There have been changes to the actuarial methods since the prior valuations. The Volunteer Emergency Medical Technician Pension Fund used a 10 year amortization period. This valuation of the new merged plan uses a 30 year amortization period.

### **GASB and Funding Progress**

Governmental Accounting Standards Board Statement Number 67 (GASB 67) contains certain accounting requirements for the Fund. Schedules, notes and required supplementary information are provided under separate cover.

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## **SECTION III**

### **SUPPORTING EXHIBITS**

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**Calculation of Annual Required Contribution**  
*(Assumes No Future Cost-Of-Living Increases)*

Item	January 1, 2016
1. Employer normal cost	\$857,332
2. Actuarial accrued liability for active members	
a. Present value of future benefits for active members	\$47,509,599
b. Less: present value of future employer normal costs	(3,784,399)
c. Less: present value of future employee contributions	(2,156,642)
d. Actuarial accrued liability	\$41,568,558
3. Total actuarial accrued liability for:	
a. Retirees and beneficiaries	\$53,905,575
b. Disabled members	-
c. Inactive members	6,804,290
d. Active members (Item 2d)	41,568,558
e. Total	\$102,278,423
4. Actuarial value of assets (Table 7)	\$76,097,619
5. Unfunded actuarial accrued liability (UAAL) (Item 3e - Item 4)	\$26,180,804
6. Funding period	30 years
7. Assumed payroll growth rate	0.00%
8. Employer contribution requirement	
a. UAAL amortization payment	\$2,187,240
b. Employer normal cost	857,332
c. Administrative expenses	83,700
d. Contribution requirement (a + b + c)	\$3,128,272

**Cost Breakdown**  
*(Assumes No Future Cost-Of-Living Increases)*

Item	Present Value of Future Normal Costs (1)	Actuarial Accrued Liabilities (2)	Total Present Value of Benefits (3) = (1) + (2)
Age and service allowances based on total service and disability benefits likely to be rendered by present active members	\$4,640,875	\$40,395,621	\$45,036,496
Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion)	110,861	306,906	417,767
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members	1,189,305	866,031	2,055,336
Benefits likely to be paid to vested inactive members	-	6,393,791	6,393,791
Benefits to be paid to members due refunds	-	410,499	410,499
Benefits to be paid to current retirees, disabled members, beneficiaries, and future beneficiaries of current retirees	-	53,905,575	53,905,575
<b>Total</b>	<b>\$5,941,041</b>	<b>\$102,278,423</b>	<b>\$108,219,464</b>
Actuarial value of assets	-	\$76,097,619	\$76,097,619
Liabilities to be covered by future contributions	\$5,941,041	\$26,180,804	\$32,121,845

**History of Total Normal Cost**  
*(Assumes No Future Cost-Of-Living Increases)*

<b>Fiscal Year Ending December 31</b>	<b>Total Normal Cost Per Active (No COLA)</b>
<b>(1)</b>	<b>(2)</b>
2016	\$540

**Statement of Plan Net Assets**

<b>Assets at Market Value</b>	
<b>Item</b>	<b>FYE 2015</b>
1. Cash and cash equivalents (operating cash)	\$5,050,415
2. Receivables	
a. Insurance premium tax	\$719,099
b. Employee contributions	42,995
c. Securities sold	-
d. Accrued interest and dividends	137,988
e. Currency contract receivable	31,815,043
f. Other	334,914
g. Rebate and fee income receivable	0
h. Total receivables	<u>\$33,050,039</u>
3. Investments, at fair value	\$69,100,364
4. Liabilities	
a. Benefits and refunds payable	(\$14,016)
b. Securities purchased	(581,371)
c. Administrative and consulting fees payable	(157,260)
d. Currency contract payable	(31,753,090)
e. Securities lending collateral	(3,629,095)
f. Total liabilities	<u>(\$36,134,832)</u>
5. Total market value of assets available for benefits	\$71,065,986

**Reconciliation of Plan Net Assets**

<b>Assets at Market Value</b>	
<b>Item</b>	<b>FYE 2015</b>
A. Market value of assets at beginning of year	\$74,029,777
B. Contribution income:	
1. Contributions	
a. Employee	\$398,050
b. Employer	-
c. Other	2,257,968
d. Total	<u>\$2,656,018</u>
2. Investment income	
a. Interest, dividends, and other income	\$1,673,588
b. Net appreciation	(1,945,520)
c. Investment expenses	(425,080)
d. Net investment income	<u>(\$697,012)</u>
3. Securities lending	
a. Gross income	\$25,352
b. Deductions	(3,637)
c. Net investment income	<u>\$21,715</u>
4. Benefits and refunds	
a. Refunds	(\$34,719)
b. Regular monthly benefits	(4,832,911)
c. Total	<u>(\$4,867,630)</u>
5. Administrative and miscellaneous expenses	(\$76,882)
C. Market value of assets at end of year	\$71,065,986

**Progress of Fund Through December 31, 2015**

<b>Plan Year Ending December 31</b>	<b>Employer Contributions*</b>	<b>Employee Contributions**</b>	<b>Administrative Expenses</b>	<b>Net Investment Income***</b>	<b>Benefit Payments</b>	<b>Transfers</b>	<b>Actuarial Value of Assets</b>
Total	\$2,238,612	\$417,406	(\$76,882)	\$4,356,336	(\$4,867,630)	-	
2015	\$2,238,612	\$417,406	(\$76,882)	\$4,356,336	(\$4,867,630)	-	\$76,097,619

\* Employer contributions equal to 50% of the gross fire insurance premium taxes from fire insurance policies written in Wyoming prior to July 1, 2015 and 70% of the gross premium taxes on or after July 1, 2015

\*\* Employee contributions may include member redeposits and member service purchase contributions

\*\*\* Net of investment expenses

**Development of Actuarial Value of Assets**

Item	FYE 2015
1. Actuarial value of assets, beginning of year (before corridor)	\$74,029,777
2. Market value, end of year	\$71,065,986
3. Market value, beginning of year	\$74,029,777
4. Non-investment/administrative net cash flow:	
a. Employee contributions	\$398,050
b. Employer contributions	-
c. Other contributions	2,257,968
d. Refund of employee accounts	(34,719)
e. Retirement benefits	(4,867,630)
f. Administrative expenses	(76,882)
g. Total net cash flow: [sum of (4a) through (4f)]	(2,323,213)
5. Investments and securities lending:	
a. Interest and dividends on investments	\$1,673,588
b. Gross income from securities lending	25,352
c. Fees and expenses	(428,717)
d. Total net income: [sum of (5a) through (5c)]	\$1,270,223
6. Investment income:	
a. Actual market return: (2) - (3) - (4g) - (5d)	(\$1,910,801)
b. Assumed rate of return	7.75%
c. Assumed amount of return	4,378,740
d. Amount subject to phase-in: (6a) - (6c)	(\$6,289,541)
7. Phase-in recognition of investment income:	
a. Current year: 0.20 * (6d)	(\$1,257,908)
b. First prior year	-
c. Second prior year	-
d. Third prior year	-
e. Fourth prior year	-
f. Total recognition	(\$1,257,908)
<b>8. Actuarial value of assets, end of year</b>	
a. Preliminary actuarial value of assets, end of year: (1) + (4g) + (5d) + (6c) + (7f)	\$76,097,619
b. Upper corridor limit: 120% * (2)	\$85,279,183
c. Lower corridor limit: 80% * (2)	\$56,852,789
d. Actuarial value of assets, end of year	\$76,097,619
9. Difference between market and actuarial value of assets	(\$5,031,633)
<b>10. Actuarial rate of return</b>	6.03%
<b>11. Market rate of return*</b>	-0.26%
<b>12. Ratio of actuarial value to market value of assets</b>	107.08%

\* Current year market rate of return is based on unaudited data and is supplied by NEPC, LLC.

### History of Investment Returns

<u>Plan Year</u>	<u>Market</u>	<u>Actuarial</u>
(1)	(2)	(3)
2015	-0.26%	6.03%

**Solvency Test**

Valuation Date	Total Active Member Contributions (1)	Inactive and Pensioner Liability (2)	Employer Financed Active Accrued Liability (3)	Actuarial Value of Assets	Percentage of Liabilities Covered by Assets		
					(1)	(2)	(3)
January 1 2016	\$5,369,518	\$60,709,865	\$36,199,040	\$76,097,619	100%	100%	27.7%

**Schedule of Funding Progress**

(1)	(2)	(3)	(4)	(5)	(6)
<b>Valuation Date</b>	<b>Actuarial Value of Assets</b>	<b>Actuarial Accrued Liability (AAL)</b>	<b>Unfunded AAL (UAAL) [(3) - (2)]</b>	<b>Funded Ratio [(2)/(3)]</b>	<b>UAAL per Active Member</b>
January 1 2016	\$76,097,619	\$102,278,423	\$26,180,804	74.40%	\$11,005

*Effective January 1, 2010, liabilities are calculated assuming no future cost-of-living increases.*

**Schedule of Contributions from the Employer(s) and Other Contributing Entities**

(1)	(2)	(3)	(4)
Fiscal Year Ending December 31	Actuarially Determined Contribution	Employer Contributions*	Percentage of Actuarially Determined Contribution Contributed [(3)/(2)]
2016	\$3,128,272	-	-

\* 70% of the gross fire insurance premium taxes from fire insurance policies written in Wyoming.

**Demographic Statistics**

	<b>As of 1/1/2016</b>
<u>Active Participants</u>	
Number	2,379
<i>Vested</i>	1,513
<i>Not vested</i>	866
Average age (years)	44.49
Average service (years)	11.01
Average entry age (years)	33.48
Total employee contributions with interest	\$5,369,518
Average employee contributions with interest	\$2,257
<u>Vested Former Participants</u>	
Number	283
Average age (years)	48.50
Total employee contributions with interest	\$551,072
Average employee contributions with interest	\$1,947
<u>Retirees</u>	
Number	1,090
Average age (years)	69.82
Total annual benefits	\$4,743,628
Average annual benefit	\$4,352
<u>Beneficiaries</u>	
Number	217
Average age (years)	71.26
Total annual benefits	\$545,372
Average annual benefit	\$2,513
<u>Participants Due Refunds</u>	
Number	1,107
Total Refunds Due	\$410,499

**Distribution of Male Active Members by Age and by Years of Service**

Average Age = 44.3      Average Service = 11.7

Age Last Birthday		Whole Years of Service at Valuation Date							Totals
		0-4	9-May	14-Oct	15-19	20-24	25-29	30 Plus	
<b>Less than 20</b>	Count	20	-	-	-	-	-	-	20
	Total Contributions	\$3,283	-	-	-	-	-	-	\$3,283
	Avg. Contributions	\$164	-	-	-	-	-	-	\$164
<b>20-24</b>	Count	73	5	-	-	-	-	-	78
	Total Contributions	20,090	\$4,484	-	-	-	-	-	24,574
	Avg. Contributions	275	\$897	-	-	-	-	-	315
<b>25-29</b>	Count	136	34	5	-	-	-	-	175
	Total Contributions	45,608	37,937	\$9,276	-	-	-	-	92,821
	Avg. Contributions	335	1,116	\$1,855	-	-	-	-	530
<b>30-34</b>	Count	147	76	24	3	-	-	-	250
	Total Contributions	52,539	95,098	54,120	\$9,109	-	-	-	210,866
	Avg. Contributions	357	1,251	2,255	\$3,036	-	-	-	843
<b>35-39</b>	Count	106	78	54	32	1	-	-	271
	Total Contributions	39,978	100,661	122,343	104,102	\$5,095	-	-	372,179
	Avg. Contributions	377	1,291	2,266	3,253	\$5,095	-	-	1,373
<b>40-44</b>	Count	79	68	42	36	20	1	-	246
	Total Contributions	32,071	87,965	99,364	130,197	98,570	\$5,386	-	453,554
	Avg. Contributions	406	1,294	2,366	3,617	4,929	\$5,386	-	1,844
<b>45-49</b>	Count	51	33	48	27	31	20	5	215
	Total Contributions	18,783	41,134	115,663	95,692	150,679	115,560	\$40,205	577,715
	Avg. Contributions	368	1,246	2,410	3,544	4,861	5,778	\$8,041	2,687
<b>50-54</b>	Count	29	50	53	42	66	59	19	318
	Total Contributions	8,367	64,248	132,751	154,685	331,155	372,323	157,776	1,221,305
	Avg. Contributions	289	1,285	2,505	3,683	5,018	6,311	8,304	3,841
<b>55-59</b>	Count	32	31	39	48	64	97	74	385
	Total Contributions	11,900	41,416	96,680	171,509	311,101	598,346	578,605	1,809,557
	Avg. Contributions	372	1,336	2,479	3,573	4,861	6,169	7,819	4,700
<b>60-64</b>	Count	16	19	20	2	5	6	3	71
	Total Contributions	5,071	22,424	45,377	6,562	24,918	37,071	23,992	165,413
	Avg. Contributions	317	1,180	2,269	3,281	4,984	6,179	7,997	2,330
<b>65-69</b>	Count	11	12	1	-	-	-	-	24
	Total Contributions	3,522	19,510	2,017	-	-	-	-	25,050
	Avg. Contributions	320	1,626	2,017	-	-	-	-	1,044
<b>70 &amp; Over</b>	Count	-	-	-	-	-	-	-	-
	Total Contributions	-	-	-	-	-	-	-	-
	Avg. Contributions	-	-	-	-	-	-	-	-
<b>Totals</b>	Count	<b>700</b>	<b>406</b>	<b>286</b>	<b>190</b>	<b>187</b>	<b>183</b>	<b>101</b>	<b>2,053</b>
	Total Contributions	<b>\$241,212</b>	<b>\$514,878</b>	<b>\$677,590</b>	<b>\$671,856</b>	<b>\$921,517</b>	<b>\$1,128,686</b>	<b>\$800,578</b>	<b>\$4,956,317</b>
	Avg. Contributions	<b>\$345</b>	<b>\$1,268</b>	<b>\$2,369</b>	<b>\$3,536</b>	<b>\$4,928</b>	<b>\$6,168</b>	<b>\$7,927</b>	<b>\$2,414</b>

**Distribution of Female Active Members by Age and by Years of Service**

Average Age = 45.8      Average Service = 6.7

Age Last Birthday		Whole Years of Service at Valuation Date						Totals	
		0-4	5-9	10-14	15-19	20-24	25-29		30 Plus
<b>Less than 20</b>	Count	2	-	-	-	-	-	-	2
	Total Contributions	\$164	-	-	-	-	-	-	\$164
	Avg. Contributions	\$82	-	-	-	-	-	-	\$82
<b>20-24</b>	Count	13	1	-	-	-	-	-	14
	Total Contributions	3,531	\$1,091	-	-	-	-	-	4,622
	Avg. Contributions	272	\$1,091	-	-	-	-	-	330
<b>25-29</b>	Count	24	2	-	-	-	-	-	26
	Total Contributions	8,050	2,679	-	-	-	-	-	10,730
	Avg. Contributions	335	1,340	-	-	-	-	-	413
<b>30-34</b>	Count	23	11	2	-	-	-	-	36
	Total Contributions	6,646	12,063	\$4,148	-	-	-	-	22,857
	Avg. Contributions	289	1,097	\$2,074	-	-	-	-	635
<b>35-39</b>	Count	30	7	1	1	-	-	-	39
	Total Contributions	12,690	7,967	2,935	\$3,193	-	-	-	26,784
	Avg. Contributions	423	1,138	2,935	\$3,193	-	-	-	687
<b>40-44</b>	Count	16	11	5	1	1	-	-	34
	Total Contributions	5,422	13,598	14,564	3,765	\$5,188	-	-	42,537
	Avg. Contributions	339	1,236	2,913	3,765	\$5,188	-	-	1,251
<b>45-49</b>	Count	18	11	3	4	-	-	1	37
	Total Contributions	5,617	13,423	6,748	14,042	-	-	\$7,888	47,717
	Avg. Contributions	312	1,220	2,249	3,511	-	-	\$7,888	1,290
<b>50-54</b>	Count	13	17	4	1	-	4	1	40
	Total Contributions	5,868	21,171	8,429	3,592	-	\$23,853	6,765	69,677
	Avg. Contributions	451	1,245	2,107	3,592	-	\$5,963	6,765	1,742
<b>55-59</b>	Count	11	23	3	8	8	4	1	58
	Total Contributions	3,913	28,456	6,379	26,655	38,323	23,876	6,915	134,518
	Avg. Contributions	356	1,237	2,126	3,332	4,790	5,969	6,915	2,319
<b>60-64</b>	Count	4	18	3	1	1	1	-	28
	Total Contributions	1,898	22,748	6,757	2,900	5,028	6,077	-	45,408
	Avg. Contributions	474	1,264	2,252	2,900	5,028	6,077	-	1,622
<b>65-69</b>	Count	5	4	-	-	-	-	-	9
	Total Contributions	1,634	4,984	-	-	-	-	-	6,618
	Avg. Contributions	327	1,246	-	-	-	-	-	735
<b>70 &amp; Over</b>	Count	3	-	-	-	-	-	-	3
	Total Contributions	1,568	-	-	-	-	-	-	1,568
	Avg. Contributions	523	-	-	-	-	-	-	523
<b>Totals</b>	Count	<b>162</b>	<b>105</b>	<b>21</b>	<b>16</b>	<b>10</b>	<b>9</b>	<b>3</b>	<b>326</b>
	Total Contributions	<b>\$57,000</b>	<b>\$128,180</b>	<b>\$49,960</b>	<b>\$54,147</b>	<b>\$48,540</b>	<b>\$53,806</b>	<b>\$21,568</b>	<b>\$413,201</b>
	Avg. Contributions	<b>\$352</b>	<b>\$1,221</b>	<b>\$2,379</b>	<b>\$3,384</b>	<b>\$4,854</b>	<b>\$5,978</b>	<b>\$7,189</b>	<b>\$1,267</b>

**Distribution of Total Active Members by Age and by Years of Service**

Average Age = 44.5      Average Service = 11.0

Age Last Birthday		Whole Years of Service at Valuation Date							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
Less than 20	Count	22	-	-	-	-	-	-	22
	Total Contributions	\$3,447	-	-	-	-	-	-	\$3,447
	Avg. Contributions	\$157	-	-	-	-	-	-	\$157
20-24	Count	86	6	-	-	-	-	-	92
	Total Contributions	23,621	\$5,575	-	-	-	-	-	29,196
	Avg. Contributions	275	\$929	-	-	-	-	-	317
25-29	Count	160	36	5	-	-	-	-	201
	Total Contributions	53,658	40,617	\$9,276	-	-	-	-	103,550
	Avg. Contributions	335	1,128	\$1,855	-	-	-	-	515
30-34	Count	170	87	26	3	-	-	-	286
	Total Contributions	59,184	107,161	58,268	\$9,109	-	-	-	233,723
	Avg. Contributions	348	1,232	2,241	\$3,036	-	-	-	817
35-39	Count	136	85	55	33	1	-	-	310
	Total Contributions	52,668	108,628	125,278	107,295	\$5,095	-	-	398,963
	Avg. Contributions	387	1,278	2,278	3,251	\$5,095	-	-	1,287
40-44	Count	95	79	47	37	21	1	-	280
	Total Contributions	37,493	101,563	113,928	133,962	103,759	\$5,386	-	496,090
	Avg. Contributions	395	1,286	2,424	3,621	4,941	\$5,386	-	1,772
45-49	Count	69	44	51	31	31	20	6	252
	Total Contributions	24,399	54,557	122,410	109,734	150,679	115,560	\$48,093	625,432
	Avg. Contributions	354	1,240	2,400	3,540	4,861	5,778	\$8,016	2,482
50-54	Count	42	67	57	43	66	63	20	358
	Total Contributions	14,235	85,418	141,180	158,277	331,155	396,176	164,542	1,290,983
	Avg. Contributions	339	1,275	2,477	3,681	5,018	6,289	8,227	3,606
55-59	Count	43	54	42	56	72	101	75	443
	Total Contributions	15,813	69,872	103,060	198,164	349,424	622,222	585,520	1,944,075
	Avg. Contributions	368	1,294	2,454	3,539	4,853	6,161	7,807	4,388
60-64	Count	20	37	23	3	6	7	3	99
	Total Contributions	6,968	45,172	52,134	9,462	29,946	43,148	23,992	210,822
	Avg. Contributions	348	1,221	2,267	3,154	4,991	6,164	7,997	2,130
65-69	Count	16	16	1	-	-	-	-	33
	Total Contributions	5,157	24,494	2,017	-	-	-	-	31,669
	Avg. Contributions	322	1,531	2,017	-	-	-	-	960
70 & Over	Count	3	-	-	-	-	-	-	3
	Total Contributions	1,568	-	-	-	-	-	-	1,568
	Avg. Contributions	523	-	-	-	-	-	-	523
<b>Totals</b>	Count	<b>862</b>	<b>511</b>	<b>307</b>	<b>206</b>	<b>197</b>	<b>192</b>	<b>104</b>	<b>2,379</b>
	Total Contributions	<b>\$298,212</b>	<b>\$643,057</b>	<b>\$727,550</b>	<b>\$726,003</b>	<b>\$970,057</b>	<b>\$1,182,492</b>	<b>\$822,146</b>	<b>\$5,369,518</b>
	Avg. Contributions	<b>\$346</b>	<b>\$1,258</b>	<b>\$2,370</b>	<b>\$3,524</b>	<b>\$4,924</b>	<b>\$6,159</b>	<b>\$7,905</b>	<b>\$2,257</b>

**Retirees by Monthly Benefit and Age**

<b>Males</b>	<b>Age Last Birthday</b>						
<b>Benefit Amount</b>	<b>Under 60</b>	<b>60-64</b>	<b>65-69</b>	<b>70-74</b>	<b>75-79</b>	<b>80 &amp; over</b>	<b>Total</b>
<b>Under \$50</b>	-	-	-	-	-	-	-
<b>\$50 - 99</b>	-	-	1	2	1	1	5
<b>\$100 - 149</b>	-	1	3	12	4	1	21
<b>\$150 - 199</b>	-	3	30	13	11	29	86
<b>\$200 - 249</b>	-	14	27	22	33	36	132
<b>\$250 - 299</b>	-	15	29	24	18	11	97
<b>\$300 - 349</b>	-	26	29	34	4	14	107
<b>\$350 - 399</b>	-	30	49	23	5	8	115
<b>\$400 &amp; Over</b>	-	218	123	53	31	10	435
<b>Total</b>	-	<b>307</b>	<b>291</b>	<b>183</b>	<b>107</b>	<b>110</b>	<b>998</b>
<b>Females</b>							
<b>Benefit Amount</b>	<b>Under 60</b>	<b>60-64</b>	<b>65-69</b>	<b>70-74</b>	<b>75-79</b>	<b>80 &amp; over</b>	<b>Total</b>
<b>Under \$50</b>	-	-	-	-	-	-	-
<b>\$50 - 99</b>	-	-	-	6	-	-	6
<b>\$100 - 149</b>	-	-	2	5	2	-	9
<b>\$150 - 199</b>	-	2	2	1	-	4	9
<b>\$200 - 249</b>	-	3	6	5	6	1	21
<b>\$250 - 299</b>	-	2	1	1	-	-	4
<b>\$300 - 349</b>	-	4	3	5	-	1	13
<b>\$350 - 399</b>	-	3	5	4	-	-	12
<b>\$400 &amp; Over</b>	-	11	7	-	-	-	18
<b>Total</b>	-	<b>25</b>	<b>26</b>	<b>27</b>	<b>8</b>	<b>6</b>	<b>92</b>
<b>Males &amp; Females</b>							
<b>Benefit Amount</b>	<b>Under 60</b>	<b>60-64</b>	<b>65-69</b>	<b>70-74</b>	<b>75-79</b>	<b>80 &amp; over</b>	<b>Total</b>
<b>Under \$50</b>	-	-	-	-	-	-	-
<b>\$50 - 99</b>	-	-	1	8	1	1	11
<b>\$100 - 149</b>	-	1	5	17	6	1	30
<b>\$150 - 199</b>	-	5	32	14	11	33	95
<b>\$200 - 249</b>	-	17	33	27	39	37	153
<b>\$250 - 299</b>	-	17	30	25	18	11	101
<b>\$300 - 349</b>	-	30	32	39	4	15	120
<b>\$350 - 399</b>	-	33	54	27	5	8	127
<b>\$400 &amp; Over</b>	-	229	130	53	31	10	453
<b>Total</b>	-	<b>332</b>	<b>317</b>	<b>210</b>	<b>115</b>	<b>116</b>	<b>1,090</b>

**Beneficiaries by Monthly Benefit and Age**

Males	Age Last Birthday								Total	
	Benefit Amount	Under 50	50-54	55-59	60-64	65-69	70-74	75-79		80 & over
Under \$50	-	-	-	-	-	-	-	-	-	-
\$50 - 99	-	-	-	1	-	-	-	-	-	1
\$100 - 149	-	-	1	-	-	-	1	-	-	2
\$150 - 199	-	-	1	-	-	-	-	1	-	2
\$200 - 249	-	-	-	1	-	1	-	-	-	2
\$250 - 299	-	-	-	1	-	-	-	-	-	1
\$300 - 349	-	-	-	-	-	-	-	1	-	1
\$350 - 399	-	-	-	-	-	-	-	-	-	-
\$400 & Over	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	-	-	<b>2</b>	<b>3</b>	-	<b>1</b>	<b>1</b>	<b>2</b>		<b>9</b>
<b>Females</b>										
Benefit Amount	Under 50	50-54	55-59	60-64	65-69	70-74	75-79	80 & over	Total	
Under \$50	-	-	-	-	-	-	-	1	1	
\$50 - 99	-	-	-	-	-	-	1	2	3	
\$100 - 149	-	-	2	2	2	3	5	36	50	
\$150 - 199	-	-	4	3	7	9	13	15	51	
\$200 - 249	-	-	8	5	9	6	9	6	43	
\$250 - 299	-	-	5	8	2	7	3	4	29	
\$300 - 349	-	-	5	4	3	1	2	-	15	
\$350 - 399	-	-	4	3	1	2	-	-	10	
\$400 & Over	-	-	2	1	1	2	-	-	6	
<b>Total</b>	-	-	<b>30</b>	<b>26</b>	<b>25</b>	<b>30</b>	<b>33</b>	<b>64</b>	<b>208</b>	
<b>Males &amp; Females</b>										
Benefit Amount	Under 50	50-54	55-59	60-64	65-69	70-74	75-79	80 & over	Total	
Under \$50	-	-	-	-	-	-	-	1	1	
\$50 - 99	-	-	-	1	-	-	1	2	4	
\$100 - 149	-	-	3	2	2	3	6	36	52	
\$150 - 199	-	-	5	3	7	9	13	16	53	
\$200 - 249	-	-	8	6	9	7	9	6	45	
\$250 - 299	-	-	5	9	2	7	3	4	30	
\$300 - 349	-	-	5	4	3	1	2	1	16	
\$350 - 399	-	-	4	3	1	2	-	-	10	
\$400 & Over	-	-	2	1	1	2	-	-	6	
<b>Total</b>	-	-	<b>32</b>	<b>29</b>	<b>25</b>	<b>31</b>	<b>34</b>	<b>66</b>	<b>217</b>	

**Pensions Awarded in 2015 by Status**

Average Age = 61.1

<b>Males &amp; Females</b>	<b>Status</b>		
<b>Benefit Amount</b>	<b>Retirees</b>	<b>Beneficiaries</b>	<b>Total</b>
<b>Under \$50</b>	0	0	0
<b>\$50-\$99</b>	1	0	1
<b>\$100-\$149</b>	3	4	7
<b>\$150-\$199</b>	6	5	11
<b>\$200-\$249</b>	3	5	8
<b>\$250-\$299</b>	1	3	4
<b>\$300-\$349</b>	2	1	3
<b>\$350-\$399</b>	5	0	5
<b>\$400 &amp; over</b>	42	0	42
<b>Total</b>	<b>63</b>	<b>18</b>	<b>81</b>
<b>Males &amp; Females</b>			
<b>Age Last Birthday</b>	<b>Retirees</b>	<b>Beneficiaries</b>	<b>Total</b>
<b>Under 50</b>	0	3	3
<b>50-54</b>	0	0	0
<b>55-59</b>	0	0	0
<b>60-64</b>	57	0	57
<b>65-69</b>	6	2	8
<b>70-74</b>	0	3	3
<b>75-79</b>	0	3	3
<b>80-84</b>	0	7	7
<b>85 &amp; over</b>	0	0	0
<b>Total</b>	<b>63</b>	<b>18</b>	<b>81</b>

**Retirees by Service at Retirement and Years Since Retirement**

Average Service at Retirement = 17.0      Average Years Since Retirement = 8.9

Service at Retirement		Years Elapsed Since Retirement							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
<b>Less than 5</b>	Count	1	-	4	1	-	-	-	6
	Avg. Benefit	\$119	-	\$234	\$257	-	-	-	\$219
<b>5-9</b>	Count	36	14	7	17	8	1	-	83
	Avg. Benefit	\$128	\$146	\$143	\$178	\$183	\$181	-	\$148
<b>10-14</b>	Count	57	36	46	46	20	7	2	214
	Avg. Benefit	\$210	\$221	\$222	\$222	\$219	\$224	\$243	\$219
<b>15-19</b>	Count	41	60	60	17	9	10	2	199
	Avg. Benefit	\$308	\$306	\$308	\$287	\$319	\$297	\$280	\$305
<b>20-24</b>	Count	88	102	39	10	15	1	-	255
	Avg. Benefit	\$402	\$397	\$387	\$410	\$368	\$384	-	\$396
<b>25-29</b>	Count	104	48	22	20	6	-	-	200
	Avg. Benefit	\$492	\$483	\$477	\$454	\$423	-	-	\$483
<b>30-34</b>	Count	60	30	18	7	-	-	-	115
	Avg. Benefit	\$574	\$568	\$560	\$489	-	-	-	\$565
<b>35 &amp; Over</b>	Count	12	4	2	-	-	-	-	18
	Avg. Benefit	\$656	\$631	\$679	-	-	-	-	\$653
<b>Totals</b>	Count	<b>399</b>	<b>294</b>	<b>198</b>	<b>118</b>	<b>58</b>	<b>19</b>	<b>4</b>	<b>1,090</b>
	Avg. Benefit	<b>\$396</b>	<b>\$379</b>	<b>\$342</b>	<b>\$296</b>	<b>\$289</b>	<b>\$269</b>	<b>\$261</b>	<b>\$363</b>

**Retirees by Year of Retirement**

January 1, 2016 Total = 1,090

<b>Year of Retirement</b>	<b>Count</b>	<b>Year of Retirement</b>	<b>Count</b>
<b>Under 1980</b>	-	<b>1998</b>	29
<b>1980</b>	-	<b>1999</b>	16
<b>1981</b>	-	<b>2000</b>	29
<b>1982</b>	-	<b>2001</b>	27
<b>1983</b>	3	<b>2002</b>	49
<b>1984</b>	-	<b>2003</b>	42
<b>1985</b>	1	<b>2004</b>	40
<b>1986</b>	3	<b>2005</b>	40
<b>1987</b>	2	<b>2006</b>	53
<b>1988</b>	3	<b>2007</b>	67
<b>1989</b>	6	<b>2008</b>	53
<b>1990</b>	5	<b>2009</b>	56
<b>1991</b>	10	<b>2010</b>	66
<b>1992</b>	8	<b>2011</b>	72
<b>1993</b>	10	<b>2012</b>	103
<b>1994</b>	12	<b>2013</b>	86
<b>1995</b>	18	<b>2014</b>	87
<b>1996</b>	19	<b>2015*</b>	53
<b>1997</b>	22		

*\*May include retirements as of January 1, 2016*

**Thirty Year Projected Benefit Payments**

<b>Year Ending December 31</b>	<b>Actives</b>	<b>Retirees*</b>	<b>Total</b>
<b>2016</b>	\$ 504,427	\$ 5,786,836	\$ 6,291,263
<b>2017</b>	1,084,079	5,739,548	6,823,628
<b>2018</b>	1,485,536	5,686,937	7,172,473
<b>2019</b>	1,853,405	5,628,804	7,482,209
<b>2020</b>	2,263,363	5,564,989	7,828,352
<b>2021</b>	2,639,439	5,495,351	8,134,790
<b>2022</b>	2,963,791	5,419,747	8,383,538
<b>2023</b>	3,301,213	5,338,045	8,639,259
<b>2024</b>	3,614,493	5,250,114	8,864,607
<b>2025</b>	3,932,049	5,155,830	9,087,879
<b>2026</b>	4,182,062	5,055,113	9,237,175
<b>2027</b>	4,358,809	4,947,914	9,306,723
<b>2028</b>	4,535,449	4,834,200	9,369,649
<b>2029</b>	4,739,194	4,713,950	9,453,144
<b>2030</b>	4,933,260	4,587,137	9,520,397
<b>2031</b>	5,132,982	4,453,791	9,586,773
<b>2032</b>	5,334,104	4,314,000	9,648,104
<b>2033</b>	5,506,154	4,167,893	9,674,048
<b>2034</b>	5,664,360	4,015,621	9,679,981
<b>2035</b>	5,780,569	3,857,381	9,637,950
<b>2036</b>	5,877,352	3,693,493	9,570,845
<b>2037</b>	6,017,795	3,524,369	9,542,164
<b>2038</b>	6,154,731	3,350,493	9,505,224
<b>2039</b>	6,251,084	3,172,426	9,423,510
<b>2040</b>	6,331,827	2,990,840	9,322,666
<b>2041</b>	6,383,366	2,806,497	9,189,863
<b>2042</b>	6,430,879	2,620,241	9,051,120
<b>2043</b>	6,465,440	2,433,152	8,898,592
<b>2044</b>	6,457,959	2,246,578	8,704,536
<b>2045</b>	6,416,892	2,062,124	8,479,016

\* Includes Disabled Members, Beneficiaries, and Deferred Vested Members.

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## **APPENDIX A**

### **SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS**

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## Summary of Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2016 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 7.75%), 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 30 years from the valuation date.

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.

The actuarial value of assets has been reinitialized to the market value of assets as of January 1, 2015.

4. Economic Assumptions

Investment return: 7.75% per year, compounded annually, composed of an assumed 3.25% inflation rate and a 4.50% 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-2000 Combined Mortality Table, fully generational, projected with Scale BB

Males: Set back 5 years with a multiplier of 104%

Females: Set back 4 years with a multiplier of 90%

Healthy Post-Retirement Mortality:

RP-2000 Combined Mortality Table, fully generational, projected with Scale BB

Males: Set back 1 year with a multiplier of 104%

Females: Set back 0 years with a multiplier of 90%

Age	Pre-Retirement		Post-Retirement		Withdrawal	
	Sample Rates Shown Below Projected to 2016 using Scale BB				Entry Age	
	Male	Female	Male	Female	<46	>45
20	0.03%	0.02%	0.03%	0.02%	20.00%	N/A
25	0.03%	0.02%	0.04%	0.02%	15.00%	N/A
30	0.04%	0.02%	0.04%	0.02%	11.00%	N/A
35	0.04%	0.03%	0.07%	0.04%	11.00%	N/A
40	0.08%	0.04%	0.10%	0.06%	9.00%	N/A
45	0.11%	0.07%	0.14%	0.10%	4.00%	15.00%
50	0.15%	0.10%	0.20%	0.14%	3.00%	15.00%
55	0.21%	0.16%	0.32%	0.23%	1.00%	8.00%
60	0.36%	0.25%	0.56%	0.39%	0.00%	5.00%
65	0.63%	0.44%	0.98%	0.72%	0.00%	5.00%
70	1.09%	0.81%	1.62%	1.24%	0.00%	5.00%
75			2.77%	2.09%	0.00%	5.00%
80			4.73%	3.40%	0.00%	5.00%
85			8.15%	5.75%	0.00%	5.00%
90			14.27%	9.93%	0.00%	5.00%
95			23.30%	15.90%	0.00%	5.00%
100			32.73%	20.37%	0.00%	5.00%

Retirement Rates: Members are assumed to retire at first eligibility.

6. Other Assumptions

- a. Percent married: 85% 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 6.50% 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: 75% of all future deferred vested members are assumed to leave their contributions in the fund and elect a deferred vested annuity.

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## **APPENDIX B**

### SUMMARY OF PLAN PROVISIONS

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## Summary of Plan Provisions

### Covered Members

Any volunteer firefighter or volunteer EMT for whom payments are received by the Volunteer Firefighter and EMT pension account as prescribed in W.S. 35-9-621(e).

### Service Retirement

#### 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.

### Vesting

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.

### Pre-retirement Death Benefit

#### 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.
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### 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
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### Contributions

Employee	\$15.00 per month.
State	Up to 70% 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	3.0% annually.

<b>Cost-of-Living Improvements</b>	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.
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