

WYOMING LAW ENFORCEMENT RETIREMENT FUND
ACTUARIAL VALUATION REPORT
FOR THE YEAR BEGINNING JANUARY 1, 2017

April 24, 2017

Board of Trustees
Wyoming Law Enforcement Retirement Fund
6101 Yellowstone Road
Suite 500
Cheyenne, WY 82002

Dear Board of Trustees:

Subject: Actuarial Valuation as of January 1, 2017

We are pleased to present the report of the actuarial valuation of the Wyoming Law Enforcement Retirement Fund (“the Fund”) for the plan year commencing January 1, 2017. This report describes the current actuarial condition of the Fund, determines the calculated employer contribution rate (the actuarially determined contribution rate), and analyzes changes in this contribution rate from the prior year. Valuations are prepared annually, as of January 1, the first day of the Fund’s plan year.

Financing objectives and funding policy

The employer and employee contribution rates are specified in the statute. The purpose of this actuarial valuation is to determine whether the statutory contribution is 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 as of January 1, 2017 is 94.01%. This funded ratio is based on the assumption that no future cost-of-living increases will be paid annually. In the January 1, 2016 valuation, this funded ratio, based on no future COLAs, was 93.34%. On a market value of assets basis, the funded ratio increased from 88.00% as of January 1, 2016 to 89.05% as of January 1, 2017.

Benefit provisions

The benefit provisions reflected in this valuation are those which were in effect on January 1, 2017. 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. There were no benefit changes since the prior valuation.

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 current assumptions used in the actuarial valuation were adopted by the Board effective February 22, 2013 and were first utilized with the January 1, 2014 valuation report. For a detailed description of the experience related to these assumptions as well as the rationale for the changes please see our latest Wyoming Retirement System Actuarial Experience Study Report. Our experience study report was dated February 21, 2013 and it covered the five-year investigation period ending December 31, 2011.

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 rates and funding periods. The actuarial calculations presented in the report are intended to provide information for rational decision making.

The 8.6% employer contribution and the 8.6% employee contribution are the rates that comply with State law. Due to the many factors affecting a retirement system, users of this report should be aware that contributions made at that rate do not necessarily guarantee long-term benefit security.

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, 2017 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, 2017 was prepared by the 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. This past fiscal year the Fund experienced a total gain on the unfunded actuarial accrued liability of approximately \$3.1 million primarily due to gains on smaller than expected increases on salaries for individual members. The aggregate results of these analyses are disclosed in Tables 4 and 5 under Section III of the report.

Actuarial certification

All of the tables contained in this actuarial valuation report were prepared by Gabriel, Roeder, Smith & Company. Historical information for years prior to 2010 was prepared by the prior actuarial firm and was not subjected to our actuarial review.

We certify that the information presented herein is accurate and fairly portrays the actuarial position of the Fund as of January 1, 2017.

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. Mark Randall and Leslie Thompson are Enrolled Actuaries and Mark Randall, Leslie Thompson, and Paul Wood are Members of the American Academy of Actuaries, and all three 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.

Respectfully submitted,
Gabriel, Roeder, Smith & Company



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Chief Executive Officer



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Table of Contents

	Page
Section I — Executive Summary	
Executive Summary	1
Section II — Discussion	
Contribution Requirements	2
Calculation of Contribution Rates	3
Financial Data and Experience	4
Member Data	5
Benefit Provisions	6
Actuarial Methods and Assumptions	7
GASB and Funding Progress	8
Section III — Supporting Exhibits	
Table 1 - Calculation of Annual Required Contribution Rate	9
Table 2 - Cost Breakdown	10
Table 3 - History of Total Normal Cost.....	11
Table 4 - Calculation of Total Actuarial Gain/(Loss)	12
Table 5 - Change in Calculated Contribution Rate Since the Prior Valuation	13
Table 6 - Statement of Plan Net Assets.....	14
Table 7 - Reconciliation of Plan Net Assets	15
Table 8 - Progress of Fund Through December 31, 2016.....	16
Table 9 - Development of Actuarial Value of Assets	17
Table 10 - History of Investment Returns.....	18
Table 11 - Solvency Test	19
Table 12 - Schedule of Funding Progress	20
Table 13 - Schedule of Contributions from the Employer(s) and Other Contributing Entities ..	21
Table 14 - Reconciliation of Participant Data.....	22
Table 15 - Demographic Statistics	23
Table 16 - Distribution of Male Active Members by Age and by Years of Service	24
Table 17 - Distribution of Female Active Members by Age and by Years of Service	25
Table 18 - Distribution of Total Active Members by Age and by Years of Service	26
Table 19 - Distribution of Male Deferred Members by Age and by Years of Service	27

Table 20	- Distribution of Female Deferred Members by Age and by Years of Service	28
Table 21	- Distribution of Total Deferred Members by Age and by Years of Service.....	29
Table 22	- Schedule of Pension Recipients Added to and Removed from Rolls.....	30
Table 23	- Retired and Disabled Members by Option Code.....	31
Table 24	- Pensioners by Monthly Benefit and Option Code	32
Table 25	- Pensioners by Age and Option Code.....	33
Table 26	- Pensions Awarded in 2016 by Option Code.....	34
Table 27	- Retirees and Disabled Members by Service at Retirement and Years Since Retirement.....	35
Table 28	- Retirees and Disabled Members by Year of Retirement	36
Table 29	- Thirty Year Projected Benefit Payments	37
Appendix A	— Summary of Actuarial Assumptions and Methods.....	38
Appendix B	— Summary of Plan Provisions	43

SECTION I

EXECUTIVE SUMMARY

Executive Summary

Item	January 1, 2017	January 1, 2016
	No COLA	No COLA
1. Contributions:		
a. Total normal cost	14.26%	14.46%
b. Employee contributions	(8.60%)	(8.60%)
c. Other expected contributions	0.00%	0.00%
d. Net employer normal cost	5.66%	5.86%
e. Amortization payment	1.26%	1.32%
f. Administrative expenses	0.34%	0.29%
g. Required contribution	7.26%	7.47%
h. Statutory	(8.60%)	(8.60%)
i. Shortfall/(surplus)	(1.34%)	(1.13%)
2. Funding Elements:		
a. Market value of assets (MVA)	\$559,283,932	\$525,237,686
b. Actuarial value of assets (AVA)	\$590,466,391	\$557,125,768
c. Actuarial accrued liability (AAL)	\$628,084,812	\$596,856,177
d. Unfunded/(overfunded) actuarial accrued liability (UAAL)	\$37,618,421	\$39,730,409
3. Contributions and Ratios:		
a. Annual required contribution	\$11,623,441	\$12,063,684
b. Actual contributions	N/A	13,730,305
i. Employer	N/A	13,454,399
ii. Other	N/A	275,906
c. Percentage contributed	N/A	113.82%
d. Funded ratio on an actuarial basis (AVA/AAL)	94.01%	93.34%
e. Funded ratio on a market basis (MVA/AAL)	89.05%	88.00%
f. Projected payroll	\$160,072,828	\$161,357,314

SECTION II

DISCUSSION

Contribution Requirements

- Exhibits throughout this report are based primarily, unless stated otherwise, on the assumption of no future 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. The actuarial value funded ratio is 94.01% and the market value funded ratio is 89.05%.
- There were no changes to the benefit provisions reflected in this actuarial valuation.
- There were no changes to the actuarial assumptions or methods.
- 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 increase as a level percentage of payroll
 - Total payroll increases are assumed at 4.25% per year
 - Future growth in the number of active members is not reflected in the annual valuation
- The analysis of the changes in the contribution rates is shown in Table 5 under Section III of the report
- The calculated funding period assuming the current statutory contribution of 8.60% of pay is 11 years.

Calculation of Contribution Rates

The funds available to pay benefits come from two sources, contributions as specified in the statute 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 sources, employer contributions and member contributions which are both determined as a percentage of pay. As shown in Table 1 under Section III of the report, the employer contribution rate has three components:

- The normal cost percentage (NC%)
- The amortization percentage (UAAL%)
- 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 3 under Section III of the report.

Members are required to make employee contributions and only the excess of the NC% over the member contribution rate is included in the employer contribution rate.

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 UAAL% is the amount required to fund this difference. It is the amount, expressed as a level percentage of payroll, necessary to amortize the UAAL. This amortization is over a period of 30 years beginning January 1, 2017. The Executive Summary shows the UAAL%, called Amortization Payment, compared to that of last year.

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 rate is used in determining the contributions necessary to meet the Actuarially Determined Contribution for the twelve-month period beginning January 1, 2017. Note, however, that the employer contribution is set at 8.60% of payroll. Therefore, the Actuarially Determined Contribution will be fully contributed. This is detailed in the Executive Summary.

Financial Data and Experience

As of January 1, 2017, the Fund has a total market value of about \$559 million. Financial information was received from Eide Bailly, LLP.

Table 7 under Section III of the report shows a reconciliation of the market values between the beginning and end of 2016.

During 2016, the total investment return on the market value of assets (MVA) was 7.60%, as reported by Meketa Investment Group, Inc., as shown in Table 10 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.

The development of the AVA is shown in Table 9 under Section III of the report. The AVA is \$590 million. The AVA is 105.58% of the MVA as of December 31, 2016, compared to 106.07% last year. The difference between the AVA and the MVA is the deferred gains and losses. As of January 1, 2016, the total deferred loss was \$31.9 million. As of January 1, 2017, the total deferred loss was \$31.2 million.

In addition to the market return, Table 10 also shows the return on the actuarial value of assets for the Fund. For 2016, this return was 6.68%. Because this is the less than the assumed 7.75% investment return, an actuarial loss occurred, increasing the unfunded actuarial accrued liabilities of the Fund by \$4.9 million.

Member Data

Member data as of January 1, 2017 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 15 under Section III of the report shows the number of members by category (active, inactive, retired, etc.) along with member statistics. Tables 16 through 28 show summaries of certain historical data and include membership statistics.

The total payroll shown on the statistical tables is the amount that was supplied by the Fund, annualized, if necessary. For the cost calculations, the pay amounts were adjusted in accordance with the actuarial assumptions to reflect one year's salary increase.

Total active member payroll decreased 0.80%, compared with a 2.91% increase the prior year.

Of the 2,719 active participants, 275 are eligible or will become eligible for normal retirement in 2017, and 276 are eligible or will become eligible for early retirement in 2017.

If the payroll does not grow at the assumed 4.25% per year average, then the current amortization payments may be understated and the funding position of the Fund will not strengthen as assumed over time. Table 5 under Section III of the report shows, for the past year, payroll for the plan increased less than expected, so the effect is an increase in the calculated contribution rate of 0.07% of payroll.

One reason payroll increased less than expected is that the salary, for continuing active participants, increased less than expected. This represented a gain to the Plan, as shown in Table 4 under Section III of the report.

Benefit Provisions

Appendix B of the report includes a more detailed summary of the benefit provisions for the Fund. A brief summary from W.S. 9-3-432 is as follows:

- *Normal Retirement Eligibility*
 - Age 60 with at least four years of service as a law enforcement officer or any age with at least twenty years of service as a law enforcement officer.
- *Normal Retirement Benefit*
 - 2.50% of highest average five-year salary not to exceed 75.0% of highest average five-year salary.
- *Normal Form of Payment*
 - Monthly benefit for life with a lump-sum death benefit equal to the excess (if any) of the employee contributions with interest over the total benefits received.
- *Employee Contributions* are required
 - 8.60% of pay.
- *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.

There have been no changes to plan provisions since the prior valuation.

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 percentage of payroll.
- The unfunded actuarial accrued liability is amortized over an open 30 year period as a level percent of payroll.
- The assumed annual investment return rate is 7.75%, with assumed inflation of 3.25%.
- Payroll is assumed to increase at 4.25% per year.
- Inactive vested participants are assumed to retire at age 60 - or the valuation date if over age 60. Those with over 20 years of service are assumed to retire immediately.
- 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 22.4 years.

There have been no changes in actuarial assumptions or methods since the prior valuation.

The actuarial assumptions and methods will be reviewed in detail as part of the 2017 Experience Study covering the five year period ending December 31, 2016.

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.

SECTION III

SUPPORTING EXHIBITS

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

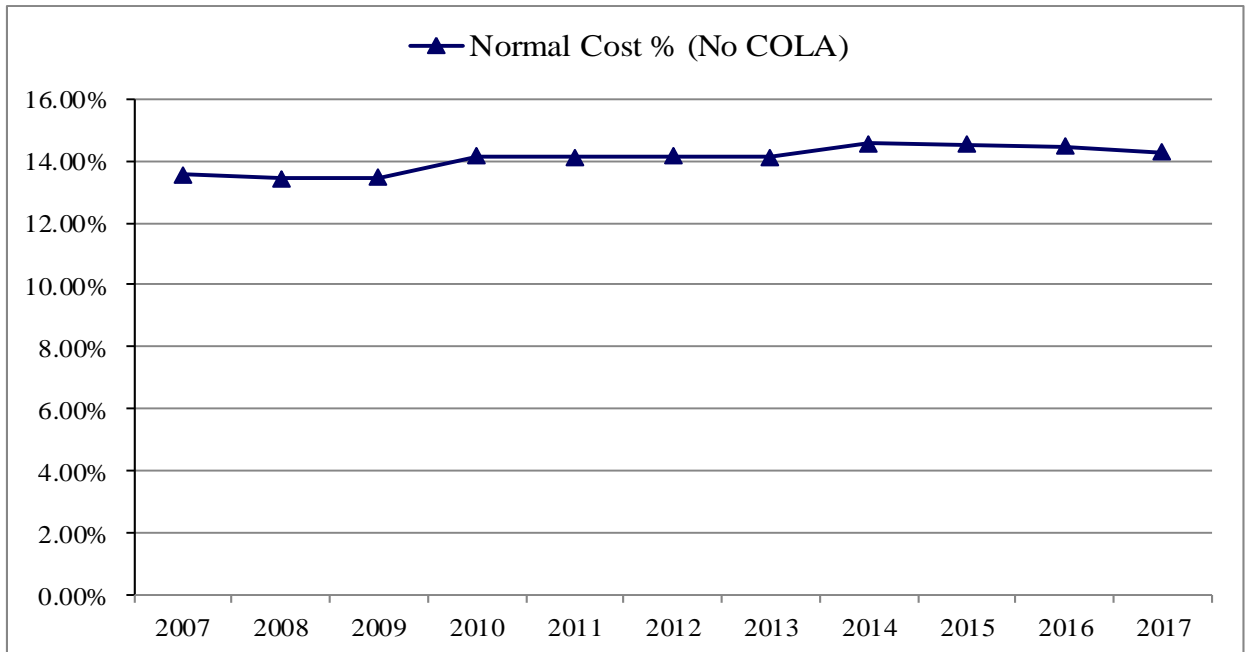
Item	January 1, 2017	January 1, 2016
1. Projected valuation payroll	\$160,072,828	\$161,357,314
2. Present value of future pay	\$1,167,089,896	\$ 1,176,957,048
3. Employer normal cost rate	5.66%	5.86%
4. Actuarial accrued liability for active members		
a. Present value of future benefits for active members	\$454,206,550	\$452,920,225
b. Less: present value of future employer normal costs	(61,148,846)	(64,319,959)
c. Less: present value of future employee contributions	(100,369,732)	(101,218,303)
d. Actuarial accrued liability	\$292,687,972	\$287,381,963
5. Total actuarial accrued liability for:		
a. Retirees and beneficiaries	\$277,225,777	\$253,148,127
b. Disabled members	37,988,156	37,300,388
<i>Duty</i>	27,526,467	27,086,735
<i>Non-duty</i>	10,461,689	10,213,654
c. Inactive members	20,182,907	19,025,699
d. Active members (Item 4d)	292,687,972	287,381,963
e. Total	\$628,084,812	\$596,856,177
6. Actuarial value of assets (Table 9)	\$590,466,391	\$557,125,768
7. Unfunded actuarial accrued liability (UAAL) (Item 5e - Item 6)	\$37,618,421	\$39,730,409
8. UAAL amortization period	30 years	30 years
9. Assumed payroll growth rate	4.25%	4.25%
10. Employer Contribution requirement		
a. UAAL amortization payment as % of pay	1.26%	1.32%
b. Employer normal cost	5.66%	5.86%
c. Administrative expense	0.34%	0.29%
d. Contribution requirement (a + b + c)	7.26%	7.47%

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	\$124,856,560	\$289,146,983	\$414,003,543
Death-in-service benefits likely to be paid on behalf of present active members (employer financed portion)	5,686,866	3,351,337	9,038,203
Separation benefits (refunds of contributions and deferred allowances) likely to be paid to present active members	30,975,152	189,652	31,164,804
Benefits likely to be paid to vested inactive members	0	16,691,984	16,691,984
Benefits to be paid to members due refunds	0	3,490,923	3,490,923
Benefits to be paid to current retirees, disabled members, beneficiaries, and future beneficiaries of current retirees	0	315,213,933	315,213,933
Total	\$161,518,578	\$628,084,812	\$789,603,390
Actuarial Value of Assets	0	590,466,391	590,466,391
Liabilities to be covered by future contributions	\$161,518,578	\$37,618,421	\$199,136,999

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

Fiscal Year Ending December 31	Normal Cost as Percent of Payroll
2007	13.56%
2008	13.42%
2009	13.46%
2010	14.14%
2011	14.13%
2012	14.14%
2013	14.12%
2014	14.56%
2015	14.54%
2016	14.46%
2017	14.26%



Calculation of Total Actuarial Gain/(Loss)
(Assumes No Future Cost-Of-Living Increases)

Item	January 1, 2017
1. Derivation of Experience Gain/(Loss)	
a. Unfunded actuarial accrued liability (UAAL) - previous valuation	\$39,730,409
b. Normal cost (NC) for fiscal year ending December 31, 2016	23,339,214
c. Actual administrative expenses for fiscal year ending December 31, 2016	544,008
d. Actuarially determined contribution for fiscal year ending December 31, 2016	25,940,413
e. Interest accrual:	
(i) For whole year on (a)	3,079,107
(ii) For half year on (b) + (c) - (d)	(79,716)
(iii) Total interest: (e)(i) + (e)(ii)	2,999,391
f. Change in UAAL due to plan changes	-
g. Change in UAAL due to assumption change	-
h. Expected UAAL current year: (a) + (b) + (c) - (d) + (e)(iii) + (f) + (g)	40,672,608
i. Actual UAAL current year	37,618,421
j. Experience gain/(loss): (h) - (i)	3,054,188
k. Experience gain/(loss) as a % of actuarial accrued liability	0.49%
2. Approximate Portion of Gain/(Loss) Due to Investments (at Actuarial Value)	(\$4,934,725)
3. Approximate Portion of Gain/(Loss) Due to Contributions higher or lower than expected	\$1,297,866
4. Approximate Portion of Gain/(Loss) Due to Liabilities: (1)(j) - (2) - (3)	<u>\$6,691,047</u>
a. Age & service retirements	(1,003,713)
b. Non-duty disability retirements	(258,258)
c. Duty disability retirements	665,904
d. Death-in-service	2,954
e. Withdrawal from employment	(2,491,491)
f. Rehires	(345,837)
g. Pay increases	11,932,362
h. Death after Retirement	(526,893)
i. Other	(1,283,981)
j. Other as a % of actuarial accrued liability	-0.20%

Change in Calculated Contribution Rate Since the Prior Valuation
(Assumes No Future Cost-Of-Living Increases)

Item	January 1, 2017
1. Calculated contribution rate as of January 1, 2016	7.47%
2. Change in contribution rate during year	
a. Change in employer normal cost	-0.20%
b. Assumption changes	0.00%
c. Actuarial (gain) loss from investments on actuarial value of assets	0.16%
d. Actuarial (gain) loss from liability sources and administrative expenses	-0.17%
e. Difference between contributions made and required contributions	-0.04%
f. Effect of payroll growing (faster)/slower than assumption	0.07%
g. Open amortization period reset to 30 years	-0.03%
h. Other changes	0.00%
i. Total change	-0.21%
3. Calculated contribution rate as of January 1, 2017	7.26%

Statement of Plan Net Assets

Assets at Market Value		
Item	FYE 2016	FYE 2015
1. Cash and Cash Equivalents (Operating Cash)	\$56,716,351	\$36,559,470
2. Receivables		
a. Insurance premium tax	\$0	\$0
b. Buy backs	0	0
c. Employee contributions	\$1,066,061	\$1,112,215
d. Employer contributions	1,066,454	1,110,187
e. Securities sold	3,024,712	0
f. Accrued interest and dividends	997,455	1,023,199
g. Currency contract receivable	203,101,170	237,023,411
h. Other	20,702	2,566,644
i. Rebate and fee income receivable	0	0
j. Total receivables	\$209,276,554	\$242,835,656
3. Investments, at fair value	\$528,509,736	\$514,777,512
4. Liabilities		
a. Benefits and refunds payable	(\$287,662)	(\$53,758)
b. Securities purchased	(1,979,685)	(4,331,237)
c. Administrative and consulting fees payable	(638,979)	(951,186)
d. Currency contract payable	(201,149,534)	(236,561,862)
e. Securities lending collateral	(31,162,849)	(27,036,909)
f. Total liabilities	(\$235,218,709)	(\$268,934,952)
5. Total Market Value of Assets Available for Benefits	\$559,283,932	\$525,237,686

Reconciliation of Plan Net Assets

Assets at Market Value		
Item	FYE 2016	FYE 2015
A. Market Value of Assets at Beginning of Year	\$525,237,686	\$533,067,313
B. Contribution Income:		
1. Contributions		
a. Employee	\$13,459,558	\$14,568,628
b. Employer	13,454,399	12,468,304
c. Other	1,258,538	1,067,426
d. Total	<u>\$28,172,495</u>	<u>\$28,104,358</u>
2. Investment Income		
a. Interest, dividends, and other income	\$10,931,620	\$12,333,875
b. Net appreciation	29,293,394	(14,710,652)
c. Investment expenses	(2,612,124)	(3,155,533)
d. Net investment income	<u>\$37,612,890</u>	<u>(\$5,532,310)</u>
3. Securities Lending		
a. Gross income	\$243,548	\$187,361
b. Deductions	(73,788)	(26,875)
c. Net investment income	<u>\$169,760</u>	<u>\$160,486</u>
4. Benefits and Refunds		
a. Refunds	(\$3,491,089)	(\$4,659,711)
b. Regular monthly benefits	(27,873,802)	(25,459,574)
c. Total	<u>(\$31,364,891)</u>	<u>(\$30,119,285)</u>
5. Administrative and Miscellaneous Expenses	(\$544,008)	(\$442,876)
C. Market Value of Assets at End of Year	\$559,283,932	\$525,237,686

Progress of Fund Through December 31, 2016

Plan Year Ending December 31	Employer Contributions*	Employee Contributions*	Administrative Expenses	Net Investment Income**	Benefit Payments	Transfers	Actuarial Value of Assets
Total	\$193,269,543	\$162,994,949	(\$3,699,251)	\$248,630,874	(\$258,024,435)	\$8,655,176	
2003	\$7,229,011	\$8,646,962	(\$67,842)	\$9,479,413	(\$6,475,594)	-	\$204,892,219
2004	12,902,452	8,415,620	(83,082)	12,318,566	(7,747,280)	-	230,698,495
2005	11,155,211	8,185,299	(138,060)	16,938,900	(10,532,309)	\$8,655,176	264,962,712
2006	34,228,475	9,114,022	(101,237)	25,935,590	(11,170,034)	-	322,969,528
2007	10,591,387	10,072,138	(113,629)	34,419,422	(13,215,795)	-	364,723,051
2008	11,861,638	11,267,854	(158,229)	(46,711,706)	(15,036,756)	-	325,945,852
2009	11,779,557	11,867,348	(184,662)	4,176,581	(16,785,935)	-	389,358,007
2010	13,166,633	12,811,136	(219,040)	13,106,593	(18,656,300)	-	409,567,029
2011	13,497,836	12,838,756	(345,446)	7,312,027	(20,667,243)	-	422,202,959
2012	13,364,655	12,963,835	(416,632)	12,335,269	(23,214,588)	-	437,235,498
2013	13,558,586	13,043,663	(470,177)	49,168,273	(25,717,983)	-	486,817,860
2014	13,496,913	13,928,652	(414,331)	42,034,212	(27,320,442)	-	528,542,864
2015	12,706,883	15,397,475	(442,876)	31,040,707	(30,119,285)	-	557,125,768
2016	13,730,305	14,442,190	(544,008)	37,077,027	(31,364,891)	-	590,466,391

* Employer contributions include other funding sources and employee contributions may include member redeposits and member service purchase contributions

** Net of investment expenses

Development of Actuarial Value of Assets

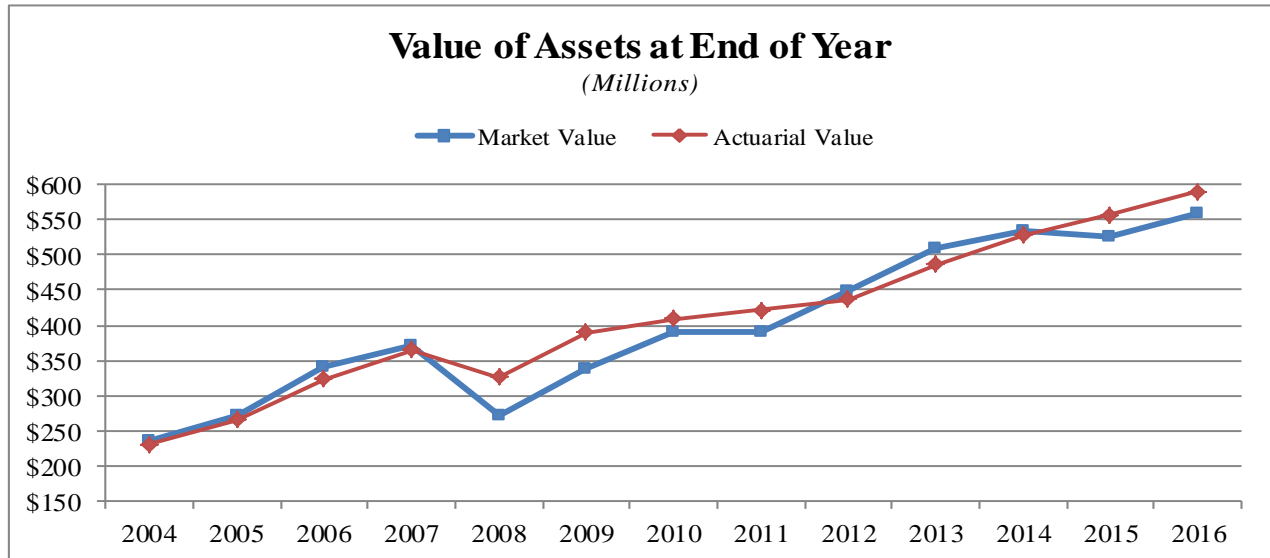
Item	FYE 2016	FYE 2015
1. Actuarial value of assets, beginning of year (before corridor)	\$557,125,768	\$528,542,864
2. Market value, end of year	\$559,283,932	\$525,237,686
3. Market value, beginning of year	\$525,237,686	\$533,067,313
4. Non-investment/administrative net cash flow:		
a. Employee contributions	\$13,459,558	\$14,568,628
b. Employer contributions	13,454,399	12,468,304
c. Other contributions	1,258,538	1,067,426
d. Refund of employee accounts	(3,491,089)	(4,659,711)
e. Retirement benefits	(27,873,802)	(25,459,574)
f. Administrative expenses	(544,008)	(442,876)
g. Total net cash flow: [sum of (4a) through (4f)]	(\$3,736,404)	(\$2,457,803)
5. Investments and securities lending:		
a. Interest and dividends on investments	\$10,931,620	\$12,333,875
b. Gross income from securities lending	243,548	187,361
c. Fees and expenses	(2,685,912)	(3,182,408)
d. Total net income: [sum of (5a) through (5c)]	\$8,489,256	\$9,338,828
6. Investment income:		
a. Actual market return: (2) - (3) - (4g) - (5d)	\$29,293,394	(\$14,710,652)
b. Assumed rate of return	7.75%	7.75%
c. Assumed amount of return	32,074,581	31,880,426
d. Amount subject to phase-in: (6a) - (6c)	(\$2,781,187)	(\$46,591,078)
7. Phase-in recognition of investment income:		
a. Current year: 0.20 * (6d)	(\$556,237)	(\$9,318,216)
b. First prior year	(9,318,216)	(2,909,087)
c. Second prior year	(2,909,087)	4,815,312
d. Third prior year	4,815,312	4,481,418
e. Fourth prior year	4,481,418	(7,247,974)
f. Total recognition	(\$3,486,810)	(\$10,178,547)
8. Actuarial value of assets, end of year		
a. Preliminary actuarial value of assets, end of year: (1) + (4g) + (5d) + (6c) + (7f)	\$590,466,391	\$557,125,768
b. Upper corridor limit: 120% * (2)	671,140,718	630,285,223
c. Lower corridor limit: 80% * (2)	447,427,146	420,190,149
d. Actuarial value of assets, end of year	\$590,466,391	\$557,125,768
9. Difference between market and actuarial value of assets	(\$31,182,459)	(\$31,888,082)
10. Actuarial rate of return	6.68%	5.89%
11. Market rate of return*	7.60%	-0.26%
12. Ratio of actuarial value to market value of assets	105.58%	106.07%

* Current year market rate of return is based on unaudited data and is supplied by the plan's investment consultant.

History of Investment Returns

Plan Year (1)	Market Value (2)	Actuarial Value (3)
2004	11.54%	5.82%
2005	8.22%	7.08%
2006	12.63%	9.23%
2007	7.44%	10.54%
2008	-29.63%	-12.67%
2009	23.72%	17.23%
2010	13.80%	3.34%
2011	-0.90%	1.77%
2012	14.05%	2.91%
2013	13.53%	11.24%
2014	4.70%	8.64%
2015	-0.26%	5.89%
2016	7.60%	6.68%
Average returns:		
Last five years:	7.79%	7.03%
Last ten years:	4.38%	5.27%

The market returns above are gross of investment expenses and were provided by the plan's investment consultant. The actuarial returns above are based on the financial information provided by the plan's auditors.



Solvency Test

Valuation Date	Total Active Member Contributions	Inactive and Pensioner Liability	Active Accrued Liability	Actuarial Value of Assets	Percentage of Liabilities Covered by Assets		
					(1)	(2)	(3)
January 1	(1)	(2)	(3)				
2005	\$61,842,876	\$87,958,000	\$110,225,000	\$230,698,495	100%	100%	73.4%
2006	66,827,791	109,836,100	119,969,000	264,962,712	100%	100%	73.6%
2007	72,004,612	130,672,200	128,806,000	322,969,528	100%	100%	93.4%
2008	74,889,713	163,621,400	141,901,000	364,723,051	100%	100%	88.9%
2009	82,306,146	173,849,000	134,790,000	325,945,852	100%	100%	51.8%
2010	92,241,086	166,797,234	121,992,468	389,358,007	100%	100%	100.0%
2011	100,333,051	186,200,382	123,626,373	409,567,029	100%	100%	99.5%
2012	106,871,965	210,366,572	123,266,327	422,202,959	100%	100%	85.2%
2013	116,002,787	229,727,100	127,814,770	437,235,498	100%	100%	71.6%
2014	121,915,804	260,467,214	144,399,452	486,817,860	100%	100%	72.3%
2015	128,198,774	286,399,991	149,642,588	528,542,864	100%	100%	76.1%
2016	133,911,728	309,474,214	153,470,235	557,125,768	100%	100%	74.1%
2017	137,264,555	335,396,840	155,423,417	590,466,391	100%	100%	75.8%

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

Schedule of Funding Progress

(1)	(2)	(3)	(4)	(5)	(6)	(7)
Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability (AAL)	Unfunded AAL (UAAL) [(3) - (2)]	Funded Ratio [(2)/(3)]	Covered Payroll	UAAL as a Percentage of Covered Payroll [(4)/(6)]
January 1						
2003	\$186,080,269	\$206,395,100	\$20,314,831	90.16%	\$79,217,700	25.64%
2004	204,892,219	236,441,300	31,549,081	86.66%	84,242,600	37.45%
2005	230,698,495	260,025,800	29,327,305	88.72%	89,351,600	32.82%
2006	264,962,712	296,633,400	31,670,688	89.32%	98,070,700	32.29%
2007	322,969,528	331,483,200	8,513,672	97.43%	108,350,000	7.86%
2008	364,723,051	380,413,100	15,690,049	95.88%	119,165,000	13.17%
2009	325,945,852	390,945,700	64,999,848	83.37%	132,701,500	48.98%
2010	389,358,007	381,030,788	(8,327,219)	102.19%	149,481,383	-5.57%
2011	409,567,029	410,159,806	592,777	99.86%	154,652,284	0.38%
2012	422,202,959	440,504,864	18,301,905	95.85%	155,481,933	11.77%
2013	437,235,498	473,544,657	36,309,158	92.33%	157,764,488	23.01%
2014	486,817,860	526,782,470	39,964,610	92.41%	154,071,943	25.94%
2015	528,542,864	564,241,353	35,698,489	93.67%	156,791,728	22.77%
2016	557,125,768	596,856,177	39,730,409	93.34%	161,357,314	24.62%
2017	590,466,391	628,084,812	37,618,421	94.01%	160,072,828	23.50%

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)	(5)	(6)
Fiscal Year Ending December 31	Actuarially Determined Contribution		Employer Contributions*		Percentage of Actuarially Determined Contributions Contributed [(5)/(3)]
	% of Payroll	Amount	% of Payroll	Amount	
2004	7.95%	\$6,693,300	15.32%	\$12,902,452	192.77%
2005	8.81%	7,873,900	12.48%	11,155,211	141.67%
2006	7.28%	7,138,000	34.90%	34,228,475	479.52%
2007	7.21%	7,810,100	9.78%	10,591,387	135.61%
2008	7.62%	9,084,200	9.95%	11,861,638	130.57%
2009	8.60%	11,413,400	8.88%	11,779,557	103.21%
2010	5.37%	8,029,651	8.81%	13,166,633	163.98%
2011	5.69%	8,806,599	8.73%	13,497,836	153.27%
2012	6.37%	9,899,466	8.60%	13,364,655	135.00%
2013	7.01%	11,071,525	8.59%	13,558,586	122.46%
2014	7.67%	11,812,078	8.76%	13,496,913	114.26%
2015	7.47%	11,708,248	8.10%	12,706,883	108.53%
2016	7.48%	12,063,684	8.76%	13,730,305	113.82%
2017	7.26%	11,623,441	-	-	-

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

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

Reconciliation of Participant Data

	Active Participants	Vested Former Participants	Retired Participants	Disabled	Beneficiaries	Participants Due Refunds	Total
Number as of January 1, 2016	2,761	300	828	131	111	759	4,890
New participants	258	-	-	-	-	51	309
Vested terminations	(58)	59	-	-	-	(1)	-
Retirements	(63)	(9)	72	-	-	-	-
Disability	(4)	(1)	-	5	-	-	-
Deceased with beneficiary	(4)	-	(7)	(1)	12	-	-
Deceased without beneficiary	(3)	(2)	(4)	-	-	(1)	(10)
Due refunds	(90)	-	-	-	-	90	-
Lump sum payoffs	(97)	(17)	-	(1)	-	(35)	(150)
Rehires/return to active	19	(12)	-	-	-	(7)	-
Certain period expired	-	-	-	-	(1)	-	(1)
Reclassifications	-	(1)	-	-	-	-	(1)
Data corrections	-	-	-	-	2	-	2
Number as of January 1, 2017	2,719	317	889	134	124	856	5,039

Demographic Statistics

	<u>January 1</u>		Change
	2017	2016	
<u>Active Participants</u>			
Number	2,719	2,761	-1.5%
<i>Vested</i>	1,816	1,802	
<i>Not vested</i>	903	959	
Average age (years)	39.50	39.32	0.5%
Average service (years)	8.32	8.08	3.0%
Average entry age (years)	31.18	31.24	-0.2%
Total payroll*	\$160,072,828	\$161,357,314	-0.8%
Average payroll*	\$58,872	\$58,442	0.7%
Total employee contributions with interest	\$137,264,555	\$133,911,728	2.5%
Average employee contributions with interest	\$50,483	\$48,501	4.1%
<u>Vested Former Participants</u>			
Number	317	300	5.7%
Average age (years)	44.31	44.30	0.0%
Total employee contributions with interest	\$14,092,891	\$13,532,863	4.1%
Average employee contributions with interest	\$44,457	\$45,110	-1.4%
<u>Service Retirees</u>			
Number	889	828	7.4%
Average age (years)	63.28	62.89	0.6%
Total annual benefits	\$22,948,720	\$21,002,458	9.3%
Average annual benefit	\$25,814	\$25,365	1.8%
<u>Disability Retirees</u>			
Number	134	131	2.3%
Average age (years)	56.68	56.13	1.0%
Total annual benefits	\$3,844,649	\$3,737,555	2.9%
Average annual benefit	\$28,691	\$28,531	0.6%
<u>Beneficiaries</u>			
Number	124	111	11.7%
Average age (years)	63.06	62.06	1.6%
Total annual benefits	\$1,872,448	\$1,547,360	21.0%
Average annual benefit	\$15,100	\$13,940	8.3%
<u>Participants Due Refunds</u>			
Number	856	759	12.8%
Total Refunds Due	\$3,490,923	\$3,102,450	12.5%

* Projected payroll for the upcoming valuation year

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

Average Age = 39.4 Average Service = 8.5

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	1	-	-	-	-	-	-	1
	Avg. Salary	*	-	-	-	-	-	-	*
20-24	Count	117	1	-	-	-	-	-	118
	Avg. Salary	\$43,980	*	-	-	-	-	-	\$43,989
25-29	Count	234	76	1	-	-	-	-	311
	Avg. Salary	48,499	\$56,440	*	-	-	-	-	50,423
30-34	Count	155	182	41	-	-	-	-	378
	Avg. Salary	49,152	58,859	\$70,410	-	-	-	-	56,132
35-39	Count	93	108	89	25	-	-	-	315
	Avg. Salary	49,800	59,544	64,162	\$67,922	-	-	-	58,637
40-44	Count	66	72	79	61	7	-	-	285
	Avg. Salary	49,741	57,401	65,433	69,056	\$65,616	-	-	60,550
45-49	Count	43	48	63	64	24	5	-	247
	Avg. Salary	52,937	59,029	63,247	73,140	78,938	\$96,904	-	65,402
50-54	Count	26	35	42	39	21	12	2	177
	Avg. Salary	51,576	61,157	63,024	67,448	71,114	75,301	*	64,210
55-59	Count	18	25	17	16	10	15	4	105
	Avg. Salary	48,741	58,547	61,385	64,021	70,396	77,409	\$90,731	63,208
60-64	Count	5	10	14	18	8	5	7	67
	Avg. Salary	43,411	59,822	61,078	59,710	66,391	62,424	82,635	62,192
65-69	Count	-	1	1	2	3	1	2	10
	Avg. Salary	-	*	*	*	*	*	*	64,469
70 & Over	Count	-	-	-	1	-	2	-	3
	Avg. Salary	-	-	-	*	-	*	-	*
Totals	Count	758	558	347	226	73	40	15	2,017
	Avg. Salary	\$48,522	\$58,605	\$64,571	\$68,600	\$72,193	\$76,029	\$84,415	\$57,991

Average Salary represents annualized salary earned in 2016 and is not shown for cells with counts less than or equal to three participants

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

Average Age = 39.7 Average Service = 7.8

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	1	-	-	-	-	-	-	1
	Avg. Salary	*	-	-	-	-	-	-	*
20-24	Count	52	-	-	-	-	-	-	52
	Avg. Salary	\$40,824	-	-	-	-	-	-	\$40,824
25-29	Count	87	24	1	-	-	-	-	112
	Avg. Salary	45,571	\$53,258	*	-	-	-	-	47,416
30-34	Count	53	26	21	-	-	-	-	100
	Avg. Salary	46,383	54,875	\$57,700	-	-	-	-	50,968
35-39	Count	46	35	32	5	-	-	-	118
	Avg. Salary	44,165	52,580	60,159	\$64,378	-	-	-	51,855
40-44	Count	26	23	27	13	-	-	-	89
	Avg. Salary	48,747	53,844	61,500	63,378	-	-	-	56,070
45-49	Count	19	29	19	19	5	1	-	92
	Avg. Salary	46,659	51,734	55,268	67,222	\$63,951	*	-	55,667
50-54	Count	16	14	12	10	8	3	1	64
	Avg. Salary	45,788	52,867	56,023	66,130	64,502	*	*	55,826
55-59	Count	3	9	14	12	6	1	-	45
	Avg. Salary	*	48,826	56,042	61,041	53,689	*	-	55,428
60-64	Count	2	3	6	7	3	2	1	24
	Avg. Salary	*	*	56,901	59,581	*	*	*	58,751
65-69	Count	-	-	2	-	-	2	1	5
	Avg. Salary	-	-	*	-	-	*	*	64,662
70 & Over	Count	-	-	-	-	-	-	-	-
	Avg. Salary	-	-	-	-	-	-	-	-
Totals	Count	305	163	134	66	22	9	3	702
	Avg. Salary	\$44,880	\$52,982	\$58,296	\$64,150	\$61,548	\$69,027	*	\$52,106

Average Salary represents annualized salary earned in 2016 and is not shown for cells with counts less than or equal to three participants

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

Average Age = 39.5 Average Service = 8.3

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	2	-	-	-	-	-	-	2
	Avg. Salary	*	-	-	-	-	-	-	*
20-24	Count	169	1	-	-	-	-	-	170
	Avg. Salary	\$43,009	*	-	-	-	-	-	\$43,021
25-29	Count	321	100	2	-	-	-	-	423
	Avg. Salary	47,705	\$55,676	*	-	-	-	-	49,627
30-34	Count	208	208	62	-	-	-	-	478
	Avg. Salary	48,447	58,361	\$66,105	-	-	-	-	55,051
35-39	Count	139	143	121	30	-	-	-	433
	Avg. Salary	47,935	57,840	63,103	\$67,331	-	-	-	56,789
40-44	Count	92	95	106	74	7	-	-	374
	Avg. Salary	49,460	56,539	64,431	68,059	\$65,616	-	-	59,484
45-49	Count	62	77	82	83	29	6	-	339
	Avg. Salary	51,013	56,282	61,398	71,786	76,354	\$95,339	-	62,760
50-54	Count	42	49	54	49	29	15	3	241
	Avg. Salary	49,371	58,788	61,468	67,179	69,290	71,273	*	61,984
55-59	Count	21	34	31	28	16	16	4	150
	Avg. Salary	47,973	55,974	58,972	62,744	64,131	77,913	\$90,731	60,874
60-64	Count	7	13	20	25	11	7	8	91
	Avg. Salary	41,980	59,291	59,825	59,674	66,117	63,783	81,264	61,284
65-69	Count	-	1	3	2	3	3	3	15
	Avg. Salary	-	*	*	*	*	*	*	64,534
70 & Over	Count	-	-	-	1	-	2	-	3
	Avg. Salary	-	-	-	*	-	*	-	*
Totals	Count	1,063	721	481	292	95	49	18	2,719
	Avg. Salary	\$47,477	\$57,334	\$62,823	\$67,594	\$69,728	\$74,743	\$83,310	\$56,472

Average Salary represents annualized salary earned in 2016 and is not shown for cells with counts less than or equal to three participants

Distribution of Male Deferred Members by Age and by Years of Service

Average Age = 43.8 Average Service = 7.6

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	-	-	-	-	-	-	-	-
20-24	-	-	-	-	-	-	-	-
25-29	-	8	7	-	-	-	-	15
30-34	-	8	19	-	-	-	-	27
35-39	-	17	18	7	-	-	-	42
40-44	-	-	18	11	-	-	-	29
45-49	-	7	18	11	-	-	-	36
50-54	-	4	11	5	1	-	-	21
55-59	-	2	15	6	1	-	-	24
60-64	1	-	5	2	1	-	-	9
65-69	-	1	1	-	-	-	-	2
70 & Over	-	-	-	-	-	-	-	-
Totals	1	47	112	42	3	-	-	205

Distribution of Female Deferred Members by Age and by Years of Service

Average Age = 45.2 Average Service = 8.2

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	-	-	-	-	-	-	-	-
20-24	-	-	-	-	-	-	-	-
25-29	-	1	2	-	-	-	-	3
30-34	-	3	10	1	-	-	-	14
35-39	-	1	11	3	1	-	-	16
40-44	-	3	15	4	-	-	-	22
45-49	-	2	15	8	1	-	-	26
50-54	-	2	6	5	-	-	-	13
55-59	-	-	6	3	1	-	-	10
60-64	-	1	5	-	1	1	-	8
65-69	-	-	-	-	-	-	-	-
70 & Over	-	-	-	-	-	-	-	-
Totals	-	13	70	24	4	1	-	112

Distribution of Total Deferred Members by Age and by Years of Service

Average Age = 44.3 Average Service = 7.8

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	-	-	-	-	-	-	-	-
20-24	-	-	-	-	-	-	-	-
25-29	-	9	9	-	-	-	-	18
30-34	-	11	29	1	-	-	-	41
35-39	-	18	29	10	1	-	-	58
40-44	-	3	33	15	-	-	-	51
45-49	-	9	33	19	1	-	-	62
50-54	-	6	17	10	1	-	-	34
55-59	-	2	21	9	2	-	-	34
60-64	1	1	10	2	2	1	-	17
65-69	-	1	1	-	-	-	-	2
70 & Over	-	-	-	-	-	-	-	-
Totals	1	60	182	66	7	1	-	317

Schedule of Pension Recipients Added to and Removed from Rolls

Fiscal Year Ending December 31	Added to Rolls*		Removed from Rolls		Total		Percent Increase in Annual Pension Benefits	Average Annual Pension Benefit
	Count	Annual Pension Benefits	Count	Annual Pension Benefits	Count	Annual Pension Benefits		
2008	72	\$1,651,841	11	(\$9,251)	610	\$13,605,759	13.91%	\$22,305
2009	55	1,154,341	9	(65,125)	656	14,694,975	8.01%	22,401
2010	75	1,881,618	12	(109,159)	719	16,467,434	12.06%	22,903
2011	93	2,330,905	7	(101,024)	805	18,697,315	13.54%	23,226
2012	54	1,418,567	7	(62,989)	852	20,052,893	7.25%	23,536
2013	77	2,048,141	12	(155,942)	917	21,945,092	9.44%	23,931
2014	98	2,598,158	14	(250,849)	1,001	24,292,401	10.70%	24,268
2015	83	2,229,651	14	(234,679)	1,070	26,287,373	8.21%	24,568
2016	91	2,618,016	14	(239,572)	1,147	28,665,817	9.05%	24,992

* Includes cost-of-living increases

Retired and Disabled Members by Option Code

	Count			Monthly Benefit		
	Male	Female	Total	Male	Female	Total
Option Code*						
1	154	69	223	\$349,626	\$113,137	\$462,763
2	339	46	385	809,409	85,805	895,213
2P	135	25	160	289,753	48,842	338,595
3	28	6	34	64,044	14,564	78,608
3P	27	7	34	68,255	10,786	79,040
4	23	7	30	56,871	13,497	70,368
5	25	13	38	41,601	21,935	63,536
Other**	116	3	119	238,356	6,300	244,656
Total	847	176	1023	\$1,917,914	\$314,866	\$2,232,781
Beneficiaries	11	113	124	\$9,672	\$146,365	\$156,037
Grand Total	858	289	1,147	\$1,927,586	\$461,232	\$2,388,818

*See optional forms of payment in Appendix B.

**66.67% joint and survivor option for grandfathered employees.

Pensioners by Monthly Benefit and Option Code

Males	Option Code								Total
	Benefit Amount	1	2	2P	3	3P	4*	5	
Under \$200	2	1	-	-	-	-	2	-	5
\$200-\$399	8	3	6	1	-	6	2	-	26
\$400-\$599	3	14	10	3	-	1	4	1	36
\$600-\$799	12	8	6	-	1	1	3	2	33
\$800-\$999	2	7	5	1	-	1	3	3	22
\$1,000-\$1,499	12	29	14	2	4	-	2	11	74
\$1,500-\$1,999	22	49	18	4	3	1	2	39	138
\$2,000-\$2,499	26	84	24	2	8	4	5	34	187
\$2,500 & over	67	144	52	15	11	13	9	26	337
Total	154	339	135	28	27	27	32	116	858
Females									
Benefit Amount	1	2	2P	3	3P	4*	5	Other	Total
Under \$200	1	-	-	-	-	-	5	-	6
\$200-\$399	2	1	1	-	-	3	15	-	22
\$400-\$599	7	3	1	-	1	-	13	-	25
\$600-\$799	4	2	1	-	-	-	12	-	19
\$800-\$999	6	2	1	-	2	2	8	-	21
\$1,000-\$1,499	9	5	3	-	-	1	28	-	46
\$1,500-\$1,999	13	7	5	3	2	1	15	2	48
\$2,000-\$2,499	17	19	6	-	2	1	10	-	55
\$2,500 & over	10	7	7	3	-	2	17	1	47
Total	69	46	25	6	7	10	123	3	289
Males & Females									
Benefit Amount	1	2	2P	3	3P	4*	5	Other	Total
Under \$200	3	1	-	-	-	-	7	-	11
\$200-\$399	10	4	7	1	-	9	17	-	48
\$400-\$599	10	17	11	3	1	1	17	1	61
\$600-\$799	16	10	7	-	1	1	15	2	52
\$800-\$999	8	9	6	1	2	3	11	3	43
\$1,000-\$1,499	21	34	17	2	4	1	30	11	120
\$1,500-\$1,999	35	56	23	7	5	2	17	41	186
\$2,000-\$2,499	43	103	30	2	10	5	15	34	242
\$2,500 & over	77	151	59	18	11	15	26	27	384
Total	223	385	160	34	34	37	155	119	1,147

*Includes 7 beneficiaries who are receiving a certain only benefit.

Pensioners by Age and Option Code

Average Age Male = 62.3

Average Age Female = 62.9

Average Age Total = 62.5

Males	Option Code								Total
	1	2	2P	3	3P	4*	5	Other	
Age Last Birthday									
Under 50	19	32	11	1	2	8	3	-	76
50-54	15	42	13	10	2	3	2	2	89
55-59	24	58	29	1	5	4	5	11	137
60-64	25	86	31	4	8	4	7	23	188
65-69	39	84	31	8	4	6	9	39	220
70-74	23	27	15	3	4	2	3	17	94
75-79	7	9	3	-	2	-	3	15	39
80-84	2	1	2	1	-	-	-	5	11
85 & over	-	-	-	-	-	-	-	4	4
Total	154	339	135	28	27	27	32	116	858
Females									
Age Last Birthday	1	2	2P	3	3P	4*	5	Other	Total
Under 50	7	4	1	3	1	3	15	-	34
50-54	7	4	5	-	1	-	7	-	24
55-59	7	13	7	1	2	1	11	-	42
60-64	20	14	3	1	1	3	17	2	61
65-69	17	10	8	1	2	-	27	-	65
70-74	8	1	1	-	-	3	18	1	32
75-79	3	-	-	-	-	-	12	-	15
80-84	-	-	-	-	-	-	6	-	6
85 & over	-	-	-	-	-	-	10	-	10
Total	69	46	25	6	7	10	123	3	289
Males & Females									
Age Last Birthday	1	2	2P	3	3P	4*	5	Other	Total
Under 50	26	36	12	4	3	11	18	-	110
50-54	22	46	18	10	3	3	9	2	113
55-59	31	71	36	2	7	5	16	11	179
60-64	45	100	34	5	9	7	24	25	249
65-69	56	94	39	9	6	6	36	39	285
70-74	31	28	16	3	4	5	21	18	126
75-79	10	9	3	-	2	-	15	15	54
80-84	2	1	2	1	-	-	6	5	17
85 & over	-	-	-	-	-	-	10	4	14
Total	223	385	160	34	34	37	155	119	1,147

*Includes 7 beneficiaries who are receiving a certain only benefit.

Pensions Awarded in 2016 by Option Code

Average Age = 55.9

Males & Females	Option Code								
Benefit Amount	1	2	2P	3	3P	4	5	Other	Total
Under \$200	-	-	-	-	-	-	1	-	1
\$200-\$399	1	-	-	-	-	-	2	-	3
\$400-\$599	2	3	2	1	-	-	1	-	9
\$600-\$799	1	-	-	-	-	-	-	-	1
\$800-\$999	-	1	2	-	-	-	-	-	3
\$1,000-\$1,499	4	1	1	-	-	-	4	-	10
\$1,500-\$1,999	3	1	-	1	-	-	1	-	6
\$2,000-\$2,499	-	5	1	1	2	-	2	-	11
\$2,500 & over	11	17	10	-	3	1	5	-	47
Total	22	28	16	3	5	1	16	0	91
Males & Females									
Age Last Birthday	1	2	2P	3	3P	4	5	Other	Total
Under 50	5	5	4	-	1	-	3	-	18
50-54	3	9	3	2	2	1	2	-	22
55-59	2	4	-	-	1	-	2	-	9
60-64	7	5	4	1	1	-	3	-	21
65-69	3	5	4	-	-	-	4	-	16
70-74	1	-	1	-	-	-	1	-	3
75-79	1	-	-	-	-	-	1	-	2
80-84	-	-	-	-	-	-	-	-	-
85 & over	-	-	-	-	-	-	-	-	-
Total	22	28	16	3	5	1	16	0	91

Retirees and Disabled Members by Service at Retirement and Years Since Retirement

Average Service at Retirement = 15.3 Average Years Since Retirement = 8.6

Service at Retirement		Years Elapsed Since Retirement							Totals
		0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	
Less than 5	Count	9	13	33	39	26	15	13	148
	Avg. Benefit	\$3,102	\$4,024	\$3,919	\$2,214	\$2,196	\$1,918	\$1,055	\$1,872
5-9	Count	45	45	22	1	-	-	-	113
	Avg. Benefit	807	961	1,015	366	-	-	-	905
10-14	Count	53	35	26	-	-	1	-	115
	Avg. Benefit	1,771	1,659	1,410	-	-	1,233	-	1,651
15-19	Count	30	34	29	-	1	-	-	94
	Avg. Benefit	1,885	1,953	1,631	-	1,506	-	-	1,827
20-24	Count	127	121	104	1	4	-	-	357
	Avg. Benefit	2,656	2,345	2,102	1,809	1,887	-	-	2,378
25-29	Count	48	42	42	-	3	-	-	135
	Avg. Benefit	3,504	3,018	2,635	-	2,103	-	-	3,051
30-34	Count	26	20	8	-	1	-	-	55
	Avg. Benefit	3,874	3,860	3,403	-	3,030	-	-	3,785
35 & Over	Count	4	2	-	-	-	-	-	6
	Avg. Benefit	4,128	3,105	-	-	-	-	-	3,787
Totals	Count	342	312	264	41	35	16	13	1,023
	Avg. Benefit	\$2,389	\$2,166	\$2,016	\$2,159	\$2,156	\$1,875	\$1,055	\$2,183

Retirees and Disabled Members by Year of Retirement

January 1, 2017 Total = 1023

Year of Retirement	Count	Year of Retirement	Count
Under 1960	-	1988	2
1960	-	1989	4
1961	-	1990	3
1962	-	1991	4
1963	-	1992	2
1964	-	1993	8
1965	-	1994	4
1966	-	1995	11
1967	-	1996	9
1968	-	1997	5
1969	-	1998	11
1970	-	1999	4
1971	-	2000	9
1972	-	2001	11
1973	1	2002	31
1974	-	2003	38
1975	-	2004	75
1976	-	2005	61
1977	-	2006	53
1978	1	2007	74
1979	1	2008	61
1980	1	2009	43
1981	2	2010	61
1982	1	2011	76
1983	2	2012	54
1984	1	2013	64
1985	2	2014	79
1986	1	2015	79
1987	3	2016*	71

**May include retirements as of January 1, 2017*

Thirty Year Projected Benefit Payments

Year Ending December 31	Actives	Retirees*	Total
2017	\$ 4,541,491	\$ 28,744,721	\$ 33,286,212
2018	6,848,150	28,609,699	35,457,849
2019	9,068,607	28,468,212	37,536,820
2020	11,411,218	28,323,184	39,734,401
2021	13,950,796	28,170,217	42,121,013
2022	16,569,698	27,990,845	44,560,543
2023	19,226,527	27,788,990	47,015,517
2024	21,952,788	27,566,875	49,519,664
2025	24,750,684	27,334,436	52,085,119
2026	27,626,791	27,085,956	54,712,747
2027	30,610,386	26,819,219	57,429,605
2028	33,795,833	26,596,347	60,392,180
2029	37,087,536	26,307,559	63,395,095
2030	40,448,197	26,022,781	66,470,979
2031	43,892,940	25,680,868	69,573,807
2032	47,414,628	25,319,000	72,733,628
2033	50,965,715	24,948,132	75,913,847
2034	54,554,535	24,526,161	79,080,696
2035	58,185,406	24,023,513	82,208,919
2036	61,850,925	23,502,913	85,353,838
2037	65,388,991	22,917,044	88,306,035
2038	68,556,400	22,336,809	90,893,210
2039	71,387,595	21,699,299	93,086,894
2040	73,884,964	21,054,590	94,939,554
2041	76,091,822	20,354,808	96,446,631
2042	77,977,865	19,687,554	97,665,419
2043	79,489,025	18,928,726	98,417,751
2044	80,696,430	18,113,760	98,810,190
2045	81,637,413	17,291,423	98,928,836
2046	82,274,257	16,477,695	98,751,952

* Includes Disabled Members, Beneficiaries, and Deferred Vested Members. Retirement benefit payments for deferred vested members are assumed to commence at age 60.

APPENDIX A

SUMMARY OF ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Actuarial Assumptions and Methods

The following methods and assumptions were used in preparing the January 1, 2017 actuarial valuation report.

1. Valuation Date

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

2. Actuarial Cost Method

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

- a. The valuation is prepared on the projected benefit basis, under which the present value, at the investment return rate assumed to be earned in the future (currently 7.75%), of each participant's expected benefit payable at retirement or death is determined, based on his/her age, service, sex and compensation. The calculations take into account the probability of a participant's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his/her terminating with a service, disability, or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable for the active participants is added to the present value of the expected future payments to retired participants and beneficiaries to obtain the present value of all expected benefits payable from the Fund on account of the present group of participants and beneficiaries.
- b. The employer contributions required to support the benefits of the Fund are determined using a level funding approach, and consist of a normal cost contribution and a unfunded accrued liability contribution.
- c. The normal cost contribution is determined using the "entry age normal" actuarial cost method. Under this method, a calculation is made to determine the average uniform and constant percentage rate of employer contribution which, if applied to the compensation of each new participant during the entire period of his/her anticipated covered service, would be required to meet the cost of all benefits payable on his/her behalf based on the benefits provisions applicable for the individual member.

- d. The unfunded actuarial accrued liability contributions are determined by subtracting the actuarial value of assets from the actuarial accrued liability and amortizing the result over 30 years from the valuation date.

3. Actuarial Value of Assets

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

4. Economic Assumptions

a. Investment return

7.75% 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.

b. Salary increase rate

Age	Rate
20	8.00%
25	8.00%
30	6.75%
35	6.00%
40	5.50%
45	5.00%
50	5.00%
55	4.25%
60	4.25%

c. Payroll growth rate

In the amortization of the unfunded actuarial accrued liability, payroll is assumed to increase 4.25% per year. This increase rate is solely due to the effect of inflation on salaries, with no allowance for future membership growth.

d. Cost-of-Living adjustment

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

5. Demographic Assumptions

a. Rates Before Retirement

Healthy Pre-Retirement Mortality:

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

Males: Set back 4 years with a multiplier of 104%

Females: Set back 3 years with a multiplier of 90%

Healthy Post-Retirement Mortality:

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

Males: No set back with a multiplier of 104%

Females: Set forward 1 year with a multiplier of 90%

Disabled Mortality:

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

Males: Set forward 5 years with a multiplier of 120%

Females: Set forward 5 years with a multiplier of 120%

Age	Pre-Retirement		Post-Retirement		Disabled	
	Projected to 2017 using Scale BB					
	Male	Female	Male	Female	Male	Female
20	0.03%	0.02%	0.03%	0.02%	2.57%	0.85%
25	0.04%	0.02%	0.04%	0.02%	2.57%	0.85%
30	0.04%	0.02%	0.04%	0.03%	2.57%	0.85%
35	0.05%	0.03%	0.08%	0.04%	2.57%	0.85%
40	0.08%	0.05%	0.11%	0.07%	2.57%	0.85%
45	0.11%	0.07%	0.15%	0.10%	3.30%	1.32%
50	0.16%	0.11%	0.21%	0.16%	4.04%	1.82%
55	0.24%	0.17%	0.36%	0.25%	4.48%	2.21%
60	0.42%	0.28%	0.62%	0.43%	4.90%	2.74%
65	0.70%	0.49%	1.08%	0.80%	5.81%	3.68%
70	1.20%	0.89%	1.79%	1.36%	7.62%	5.10%
75			3.04%	2.27%	10.15%	7.07%
80			5.18%	3.72%	13.14%	9.79%
85			8.91%	6.33%	18.24%	13.93%
90			15.80%	10.97%	28.98%	21.07%
95			25.11%	16.97%	39.29%	27.08%
100			34.05%	21.30%	47.75%	35.17%

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

b. Disability and Withdrawal

Age	Disability		Withdrawal		Withdrawal		
	Male	Female	Ultimate		Service	First five years	
			Male	Female		Male	Female
20	0.07%	0.07%	10.00%	10.00%	1	25%	32%
25	0.07%	0.07%	10.00%	10.00%	2	20%	22%
30	0.07%	0.07%	7.50%	7.50%	3	13%	20%
35	0.08%	0.08%	6.50%	6.50%	4	11%	15%
40	0.18%	0.18%	6.00%	6.00%	5	11%	12%
45	0.38%	0.38%	5.00%	5.00%			
50	0.67%	0.67%	3.00%	3.00%			
55	1.14%	1.14%	3.00%	3.00%			
60	2.22%	2.22%	3.00%	3.00%			

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

c. Retirement Rates

Age	Reduced Rate	Unreduced Rate	Age	Reduced Rate	Unreduced Rate
50	7.5%	20.0%	58	7.5%	15.0%
51	6.0%	18.0%	59	15.0%	15.0%
52	6.0%	18.0%	60	NA	15.0%
53	8.5%	18.0%	61	NA	25.0%
54	9.0%	18.0%	62	NA	25.0%
55	12.0%	15.0%	63	NA	10.0%
56	8.5%	15.0%	64	NA	25.0%
57	8.5%	15.0%	65	NA	100.0%

10% is assumed for members with at least 20 years of service before age 50

6. Other Assumptions

- a. Percent married: 85.00% of employees are assumed to be married. (No beneficiaries other than the spouse assumed.)
- b. Age difference: Male members are assumed to be three years older than their spouses, and female members are assumed to be three years younger than their spouses.
- c. Percent electing annuity on death (when eligible): All of the spouses of vested, married participants are assumed to elect an annuity.
- d. Percent electing deferred termination benefit: It is assumed that 45% of active members who terminate with a vested deferred benefit will elect to have their contributions refunded.

- e. Assumed age for commencement of deferred benefits: Members electing to receive a deferred benefit are assumed to commence receipt at the first age at which unreduced benefits are available, which for this plan is age 60.
- f. No benefit data is available for members entitled to deferred benefits. The benefit is estimated using the final average compensation and service provided by WRS.
- g. There will be no recoveries once disabled.
- h. No children are assumed for purposes of valuing the ordinary death benefit.
- i. Administrative expenses: Assumed to be the average of the prior two years, with each year projected at 6.5% to the valuation date.
- j. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported pay represents amount paid to members during the year ended on the valuation date.
- k. Decrement timing: Decrements of all types are assumed to occur mid-year.
- l. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
- m. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in the report, and the actual payroll payable at the time contributions are made.
- n. Benefit Service: All members are assumed to accrue one year of service each year.

APPENDIX B

SUMMARY OF PLAN PROVISIONS

Summary of Plan Provisions

Covered Members	County sheriffs, deputy county sheriffs, municipal police officers; Investigator of the Wyoming Livestock Board; meeting the specifications of W.S.7-2-101(a)(iv)(E), investigators employed by the Wyoming State Board of Outfitters and professional guides meeting the specifications of W.S. 7-2-101(a)(iv)(J); Correctional officers, probation and parole agents employed by the Wyoming Department of Corrections, Wyoming Law Enforcement Academy instructors, University of Wyoming campus police officers; And full-time dispatchers or detention officers for law enforcement agencies.
Final Average Salary	Employee's average annual salary for the highest paid five continuous years of service.
Service Retirement	
Eligibility	Age 60 with four or more years of service as a law enforcement officer or any age with at least twenty years of service as a law enforcement officer. Early retirement benefits are payable to any law enforcement officer who has at least four but less than twenty years of service and are at least age 50. Early retirement benefits are actuarially reduced by 5% per year before age 60.
Monthly Benefit	2.50% of employee's highest five-year average salary for each year of credited service, not to exceed 75.0% of final average salary.
Vesting	Any employee who has left employment with four or more years of service, and who has not withdrawn accumulated contributions, is eligible to receive the above benefit or can elect to receive a lump-sum refund of contributions with interest. An employee who terminates with less than four years of service is only eligible for the lump-sum benefit.
Duty Disability Retirement	
Eligibility	No age or service eligibility requirements. Partial or total disability resulting from an individual and specific act, the type of which would normally occur only while employed as an employee, or as otherwise defined under W.S. 9-3-432(h).
Monthly Benefit	62.5% of Final Salary.
Non-duty Disability Retirement	
Eligibility	10 years of credited service. Partial or total disability, but not eligible for duty disability.
Monthly Benefit	50.0% of Final Salary.

Pre-retirement Duty Death Benefit

Eligibility	No age or service requirements.
Monthly Benefit	62.5% of member's final actual salary, payable to the surviving spouse plus 6% of the member's final actual salary for each unmarried child under 18. Payment shall not exceed the member's final actual salary.

Pre-retirement Non-duty Death Benefit

Eligibility	No age or service requirements.
Monthly Benefit	50% of the member's final actual salary payable to the surviving spouse plus 6% of the member's final actual salary for each unmarried child under 18. Payment shall not exceed 100% of the member's final actual salary.

Contributions

Employee	8.6% of salary. The employer may subsidize all or part of the employee contributions.
Employer	8.6% of salary.
Interest	3.0% annually effective January 1, 2016.

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.
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Optional Forms of Payment

Option 1	Monthly benefit for life with a lump-sum death benefit equal to the excess (if any) of the employee contributions with interest over the total benefits received.
Option 2	Monthly benefit for life. Upon death, 100% of the benefit continues to be paid to the beneficiary.
Option 2P	Monthly benefit for life. Upon death, 100% of the benefit continues to be paid to the beneficiary. Benefit reverts to Option 1 amount but without the cash refund feature upon beneficiary death.
Option 3	Monthly benefit for life. Upon death, 50% of the benefit continues to be paid to the beneficiary.
Option 3P	Monthly benefit for life. Upon death, 50% of the benefit continues to be paid to the beneficiary. Benefit reverts to Option 1 amount but without the cash refund feature upon beneficiary death.
Option 4	Monthly benefit for life with a guarantee of 120 monthly payments
Option 5	The largest possible monthly benefit payable for life with no lump-sum death benefit.
Other	Grandfathered group of retirees has an optional form which, upon death, 66.67% of the benefit continues to be paid to the beneficiary.