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GASB STATEMENT NO. 74 REPORT

FOR THE STATE OF OKLAHOMA

PUBLIC EMPLOYEES RETIREMENT SYSTEM

PREPARED AS OF JUNE 30, 2018





Cavanaugh Macdonald

CONSULTING, LLC

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October 9, 2018

Mr. Joseph Fox
Executive Director
Oklahoma Public Employees Retirement System
5400 N. Grand Boulevard, Suite 400
Oklahoma City, OK 73112-5625

Dear Mr. Fox:

Presented in this report is information to assist the Oklahoma Public Employees Retirement System in meeting the requirements of the Governmental Accounting Standards Board (GASB) Statement No. 74 for the June 30, 2018 Measurement Date. The calculations in this report have been made on a basis that is consistent with our understanding of this accounting standard (GASB 74).

The annual actuarial valuation performed as of July 1, 2018 was used as the basis for much of the information presented as of June 30, 2018 in this report. The valuation was based upon data, furnished by the Oklahoma Public Employees Retirement System staff, concerning active, inactive and retired members along with pertinent financial information. This information was reviewed for completeness and internal consistency, but was not audited by us. The valuation results depend on the integrity of the data. If any of the information is inaccurate or incomplete our results may be different and our calculations may need to be revised. Please see the actuarial valuation for additional details on the funding requirements for the System including actuarial assumptions and methods and the funding policy.

To the best of our knowledge, the information contained in this report is complete and accurate. The calculations were performed by qualified actuaries according to generally accepted actuarial principles and practices, as well as in conformity with Actuarial Standards of Practice issued by the Actuarial Standards Board. The calculations are based on the current provisions of the System, and on actuarial assumptions that are internally consistent and individually reasonable based on the actual experience of the System. In addition, the calculations were completed in compliance with applicable law and, in our opinion, meet the requirements of GASB 74.



Mr. Joseph Fox
October 9, 2018
Page 2

These results are only for financial reporting and may not be appropriate for funding purposes or other types of analysis. Calculations for purposes other than satisfying the requirements of GASB 74 may produce significantly different results. Future actuarial results may differ significantly from the current results presented in this report due to such factors as changes in plan experience or changes in economic or demographic assumptions.

We, Alisa Bennett, FSA and Brent A. Banister, FSA, are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein. We are available to answer any questions on the material contained in this report or to provide explanations or further details as may be appropriate.

Respectfully submitted,

A handwritten signature in blue ink that reads 'Alisa Bennett'.

Alisa Bennett, FSA, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink that reads 'Brent A. Banister'.

Brent A. Banister, PhD, FSA, EA, FCA, MAAA
Chief Actuary



TABLE OF CONTENTS

<u>Section</u>	<u>Item</u>	<u>Page No.</u>
	Summary of Principal Results	1
	Introduction	2
I	Notes to Financial Statements	4
II	Required Supplementary Information	9
 <u>Appendix</u>		
A	Required Supplementary Information Tables Exhibit A – Schedule of Changes in the Net OPEB Liability Exhibit B – Schedule of Employer Contributions	12
B	Summary of Main Benefit Provisions	16
C	Statement of Actuarial Assumptions	29



REPORT OF THE ANNUAL GASB STATEMENT NO. 74

OKLAHOMA PUBLIC EMPLOYEES RETIREMENT SYSTEM

SUMMARY OF PRINCIPAL RESULTS

Valuation Date (VD):	July 1, 2018
Prior Measurement Date:	June 30, 2017
Measurement Date (MD):	June 30, 2018
Membership Data:	
Retirees and Beneficiaries	13,998
Inactive Vested Members	6,024
Inactive Nonvested Members	0
Active Employees	<u>36,329</u>
Total	56,351
Single Equivalent Interest Rate (SEIR):	
Long-Term Expected Rate of Return	7.00%
Municipal Bond Index Rate at Prior Measurement Date	3.56%
Municipal Bond Index Rate at Measurement Date	3.89%
Year in which Fiduciary Net Position is Projected to be Depleted	N/A
Single Equivalent Interest Rate at Prior Measurement Date	7.00%
Single Equivalent Interest Rate at Measurement Date	7.00%
Net OPEB Liability:	
Total OPEB Liability (TOL)	\$328,143,546
Fiduciary Net Position (FNP)	<u>341,084,506</u>
Net OPEB Liability (NOL = TOL – FNP)	(\$12,940,960)
FNP as a percentage of TOL	103.94%



INTRODUCTION

The Governmental Accounting Standards Board issued Statement No. 74 (GASB 74), “*Financial Reporting for Postemployment Benefit Plans other than Pension Plans*”, in June 2015. The effective date for reporting under GASB 74 for the Oklahoma Public Employees Retirement System was fiscal year end June 30 2017.

This report, prepared as of June 30, 2018 (the Measurement Date), presents information to assist the Oklahoma Public Employees Retirement System in meeting the requirements of GASB 74. Much of the material provided in this report is based on the data, assumptions and results of the annual actuarial valuation of the System performed as of July 1, 2018 (the Valuation Date). The results of that valuation were detailed in a report dated October 8, 2018.

GASB 74 replaces GASB 43, and represents a significant departure from the requirements of the prior statement. GASB 43 was issued as a “funding friendly” statement that required postemployment benefit plans other than pension plans (OPEB) to report items consistent with the results of the plan’s actuarial valuations, as long as those valuations met certain parameters. GASB 74 basically separates accounting from funding by creating disclosure and reporting requirements that may or may not be consistent with the basis used for funding the Plan.

A major change in GASB 74 is the requirement to determine the Total OPEB Liability (TOL) utilizing the Entry Age Normal actuarial cost method. The Net OPEB Liability (NOL) is then set equal to the TOL minus the Plan’s Fiduciary Net Position (FNP) (basically the fair (market) value of assets). The benefit provisions recognized in the calculation of the TOL are summarized in Schedule B.

Among the items needed for the liability calculation is the discount rate, or Single Equivalent Interest Rate (SEIR), as described by GASB 74. To determine the SEIR, the FNP must be projected, using GASB 74 guidelines, into the future for as long as there are anticipated benefits payable under the plan’s provisions applicable to the members and beneficiaries of the System on the Measurement Date. If the FNP is not projected to be depleted at any point in the future, the long-term expected rate of return on plan investments expected to be used to finance the benefit payments may be used as the SEIR.

If, however, the FNP is projected to be depleted at a future measurement date, the SEIR is determined as the single rate that will generate a present value of benefit payments equal to the sum of the present value determined by discounting all projected benefit payments through the date of depletion by the long-term expected rate of return, and the present value determined by discounting those benefits after the date of depletion by a 20-year tax-exempt municipal bond (rating AA/Aa or higher) rate. The rate used, if necessary, for this purpose is the monthly average of the Bond Buyers General



Obligation 20-year Municipal Bond Index Rate (formerly published monthly by the Board of Governors of the Federal Reserve System) (3.89%).

Our calculations indicate that the FNP is not projected to be depleted, so the Municipal Bond Index Rate is not used in the determination of the SEIR for either the June 30, 2017 or the June 30, 2018 TOL. The SEIR is 7.00% at June 30, 2018 and 7.00% at June 30, 2017, the long-term assumed rate of return on investments in effect at the respective Measurement Dates. Please see Paragraph 35.b.(2) for more explanation of the development of the SEIR.

The FNP projections are based upon the Oklahoma Public Employees Retirement System's financial status on the Measurement Date, the indicated set of methods and assumptions, and the requirements of GASB 74. As such, the FNP projections are not reflective of the cash flows and asset accumulations that would occur on an ongoing plan basis, reflecting the impact of future members. Therefore, the results of this test do not necessarily indicate whether or not the fund will actually run out of money, the financial condition of the System, or the System's ability to make benefit payments in future years.

The sections that follow provide the results of all the necessary calculations, presented in the order laid out in GASB 74 for note disclosure and Required Supplementary Information (RSI).



SECTION I – NOTES TO FINANCIAL STATEMENTS

The material presented herein will follow the order presented in GASB 74. Paragraph numbers are provided for ease of reference.

Paragraphs 34.a. (1)-(3): This information will be supplied by the System.

Paragraph 34.a. (4): The data required regarding the membership of the System were furnished by the System. The following table summarizes the membership of the System as of July 1, 2018, the date of the valuation used to determine the June 30, 2018 Total OPEB Liability.

Membership

Number as of July 1, 2018	
Inactive Members Or Their Beneficiaries	13,998
Currently Receiving Benefits	
Inactive Members Entitled To But Not Yet	6,024
Receiving Benefits	
Nonvested Terminations	-
Active Members	36,329
Total	56,351

Paragraphs 34.a. (5)-(6) and Paragraphs 34.b.-e.: This information will be supplied by the System.

Paragraph 35.a. (1)-(4): As stated earlier, the NOL is equal to the TOL minus the FNP. That result, as of June 30, 2018, is presented in the following table.

Fiscal Year Ending June 30, 2018	
Total OPEB Liability	\$ 328,143,546
Fiduciary Net Position	<u>341,084,506</u>
Net OPEB Liability	\$ (12,940,960)
Ratio of Fiduciary Net Position to Total OPEB Liability	103.94%



Paragraph 35.b.: This paragraph requires information to be disclosed regarding the actuarial assumptions and other inputs used to measure the TOL. The complete set of actuarial assumptions and other inputs utilized in developing the TOL are outlined in Appendix C. The TOL as of June 30, 2018 was determined based on an actuarial valuation prepared as of July 1, 2018, using the following actuarial assumptions and other inputs:

Price Inflation	2.75 percent
Salary increases, including price inflation	3.50 to 9.50 percent
Long-term Rate of Return, net of investment expense, including price inflation	7.00 percent
Municipal Bond Index Rate	
Prior Measurement Date	3.56 percent
Measurement Date	3.89 percent
Year FNP is projected to be depleted	N/A
Single Equivalent Interest Rate, net of plan investment expense, including price inflation	
Prior Measurement Date	7.00 percent
Measurement Date	7.00 percent
Healthcare Cost Trend Rate	N/A

Mortality Pre-retirement mortality rates were based on the RP-2014 Blue Collar Active Healthy Mortality Table with base rates projected to 2025 using Scale MP-2016.

Post-retirement mortality rates were based on the RP-2014 Blue Collar Retiree Healthy Mortality Table with base rates projected to 2025 using Scale MP-2016 (males multiplied by 95% under age 70 and 105% over age 70, while female rates are multiplied by 90% and 115%).

Disability mortality rates were based on the post-retirement mortality rates with rates set forward 12 years.



For Department of Corrections officers, we assumed the mortality rate is 10% higher than the above table while the participant is active. This 10% is assumed to be in-line-of-duty.

The actuarial assumptions used in the valuation are based on the results of the most recent actuarial experience study, which covered the three-year period ending June 30, 2016. The experience study report is dated April 13, 2017.

Paragraph 35.b.(1)

Sensitivity analysis: The disclosure of the sensitivity of the Net OPEB Liability to changes in the healthcare cost trend rate. The TOL is based on a medical benefit that is a flat dollar amount, therefore, it is unaffected by a healthcare cost trend rate. An increase or decrease in the trend rate would have no effect on the TOL.

Paragraph 35.b.(2)

(a) Discount rate (SEIR): The discount rate used to measure the TOL at June 30, 2018 was 7.00 percent. The discount rate used to measure the TOL at the Prior Measurement Date was 7.00 percent.

(b) Projected cash flows: The projection of cash flows used to determine the discount rate assumed that plan contributions from members and the State of Oklahoma will be made at the current contribution rates as set out in state statute:

- a. Employee contribution rate: Rates vary by type of employee (See Appendix B for more detail)
- b. State contribution rate: 16.50% of covered payroll
- c. Administrative expenses in the prior year were projected forward with price inflation as an estimate for administrative expenses in current and future years. The portion of expenses in future years allocated to the current members was based on the proportionate share of covered payroll in each year for the remainder of the existing members to the total covered payroll for all members.
- d. Both pension and OPEB benefits are paid by the trust as a whole.

Based on those assumptions, the System's FNP was projected to be available to make all projected future benefit payments of current System members. Therefore, the long-term expected rate of return on System investments of 7.00% was applied to all periods of projected benefit payments to determine the TOL.

The FNP projections are based upon the System's financial status on the Measurement Date, the indicated set of methods and assumptions, and the requirements of GASB 74. As such,



the FNP projections are not reflective of the cash flows and asset accumulations that would occur on an ongoing System basis, reflecting the impact of future members. Therefore, the results of this test do not necessarily indicate whether or not the fund will actually run out of money, the financial condition of the System, or the System's ability to make benefit payments in future years.

- (c) Long-term rate of return:** The long-term expected rate of return on plan investments is reviewed as part of the experience study. Several factors are considered in evaluating the long-term rate of return assumption, including long-term historical data, estimates inherent in current market data, and an analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation), along with estimates of variability and correlations for each asset class, were developed by the System's investment consultant. These ranges were combined to develop the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and then adding expected inflation. The capital market assumptions developed by investment consultants are often intended for use over a 10-year investment horizon and are not always useful in setting the long-term rate of return for funding OPEB plans which covers a longer timeframe. The long-term rate of return assumption is intended to be a long-term assumption (30 to 50 years) and is not expected to change absent a significant change in the asset allocation, a change in the inflation assumption, or a fundamental change in the market that alters expected returns in future years.
- (d) Municipal bond rate:** A municipal bond rate was not used in determining the discount rate. If it were required, the rate would be 3.89% on the Measurement Date.
- (e) Periods of projected benefit payments:** Projected future benefit payments for all current plan members until benefit payments ran out.



(f) **Assumed asset allocation:** The target asset allocation and best estimates of arithmetic real rates of return for each major asset class, as used in the June 30, 2016 experience study, are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return*
US Large Cap Equity	38.0%	3.8%
US Small Cap Equity	6.0%	4.9%
Non-US Equity	24.0%	9.2%
US Fixed	<u>32.0%</u>	1.4%
Total	100.0%	

*Arithmetic mean

(g) **Sensitivity analysis:** This paragraph requires disclosure of the sensitivity of the NOL to changes in the discount rate. The following presents the NOL of the System, calculated using the discount rate of 7.00 percent, as well as the System's NOL calculated using a discount rate that is 1-percentage-point lower (6.00 percent) or 1-percentage-point higher (8.00 percent) than the current rate

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Net OPEB Liability	\$20,603,534	(\$12,940,960)	(\$41,793,057)

Paragraph 35.c.: The TOL at June 30, 2018 is based upon an actuarial valuation prepared as of July 1, 2018.



SECTION II – REQUIRED SUPPLEMENTARY INFORMATION

There are several tables of Required Supplementary Information (RSI) that need to be included in the System's financial statements:

Paragraphs 36.a.-c.: The required tables of schedules are provided in Appendix A.

Paragraph 36.d. and 37: The money-weighted rates of return will be supplied by the System.

Paragraph 38: The following information should be noted regarding the RSI, particularly for the *Schedule of Employer Contributions*:

Changes of benefit and funding terms: The following changes to the plan provisions were made by the Oklahoma Legislature and reflected in the valuation performed as of July 1 listed below:

2014: The plan has been amended by House Bill 2630 in 2014 which states that effective November 1, 2015, OPERS shall create a defined contribution plan for most people first employed by a participating employer. Exemptions from the new defined contribution plan include hazardous duty members and district attorneys, assistant district attorneys and employees of the district attorney's office. Each employer shall send to OPERS the difference between the required employer contribution to OPERS and the amount required to match the participating employee's contribution in the defined contribution plan.

Senate Bill 2120, also enacted in 2014, amends House Bill 2630 to further exempt from the new defined contribution plan county elected officials and employees of a county, county hospital, city or town, conservation district, circuit engineering district, and any public or private trust in which a county, city or town participates. Senate Bill 2120 also states that employees who participate in the defined contribution system are excluded from the \$105 health care subsidy.

New employees specifically exempted from the defined contribution plan will participate in the existing defined benefit plan.

2011: The retirement age for all members hired on or after November 1, 2011 was increased to 65. These members are also eligible for an unreduced benefit with 90 points, after they reach 60 years of age. Cost of living adjustments for retired members must be passed and funded by Legislature before they can be granted.

The vesting period for elected members hired on or after November 1, 2011 was increased to 8 years of appointed service. Also for this group, the normal retirement



age was increased to 65 with 8 years of service, or age 62 with 10 years of service. This group will also contribute at the same rate and have their benefits calculated using the same formula as other state and local government employees.

Changes in actuarial assumptions:

7/1/2017 valuation:

- Decrease the investment return from 7.25% to 7.00%.
- Decrease the price inflation from 3.00% to 2.75%.
- Decrease the real wage growth from 1.00% to 0.75%.
- Change mortality assumption to reflect recent mortality improvements.
- Salary scale assumption was revised.
- Withdrawal rates were revised.
- Disability rates were revised.
- Retirement rates were revised.



Method and assumptions used in calculations of actuarially determined contributions.

The System is funded with fixed contribution rates for the state and with varying contributions for employees based on their job and personal elections. The Actuarially Determined Contributions in the *Schedule of Employer Contributions* are calculated as of the beginning of the fiscal year in which contributions are reported.

The following actuarial methods and assumptions (from the July 1, 2017 actuarial valuation) were used to determine the Actuarially Determined Contribution reported for Fiscal Year End 2018 in that schedule:

Actuarial cost method	Entry age normal
Amortization method	Level percentage of payroll, closed
Remaining amortization period	10 years
Asset valuation method	5-year moving average
Price Inflation	2.75 percent
Salary increase, including price inflation	3.50 to 9.50 percent
Long-term Rate of Return, net of investment expense, including price inflation	7.00 percent
Healthcare Cost Trend Rate	N/A

Please see the information presented earlier in regard to Paragraph 38 for detailed information on the benefit changes and assumption changes that may have impacted the Actuarially Determined Contributions shown in the *Schedule of Employer Contributions*.

It should be noted that the funding valuation develops a combined pension and OPEB rate.



APPENDIX A

**REQUIRED
SUPPLEMENTARY INFORMATION**



Exhibit A
GASB 74 Paragraph 36.a.
SCHEDULE OF CHANGES IN THE NET OPEB LIABILITY

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Total OPEB Liability										
Service Cost	\$8,367,319	\$8,550,066								
Interest	22,240,019	22,562,886								
Benefit changes	0	0								
Difference between expected and actual experience	(10,598,998)	(16,757,130)								
Changes of assumptions	0	11,072,934								
Benefit payments	(18,840,056)	(18,999,021)								
Refunds of contributions	<u>0</u>	<u>0</u>								
Net change in Total OPEB Liability	\$1,168,284	\$6,429,735								
Total OPEB Liability - beginning*	\$326,975,262	\$320,545,527								
Total OPEB Liability - ending (a)	\$328,143,546	\$326,975,262								
Plan Fiduciary Net Position										
Contributions – employer	\$19,080,000	\$18,828,000								
Contributions – non-employer	0	0								
Contributions – member	0	0								
Net investment income	25,501,819	35,746,586								
Benefit payments	(18,840,056)	(18,999,021)								
Administrative expense	(178,503)	(183,503)								
Refunds of contributions	0	0								
Other	<u>0</u>	<u>0</u>								
Net change in Plan Fiduciary Net Position	\$25,563,260	\$35,392,062								
Plan Fiduciary Net Position – beginning*	\$315,521,246	\$280,129,184								
Plan Fiduciary Net Position - ending (b)	341,084,506	315,521,246								
Net OPEB Liability - ending (a) - (b)	(\$12,940,960)	\$11,454,016								

* 2017 is the first year the Medical Supplement is split out.



Exhibit A (Continued)

**GASB 74 Paragraph 36.b.
SCHEDULE OF CHANGES IN THE NET OPEB LIABILITY**

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Total OPEB Liability	\$328,143,546	\$326,975,262								
Plan Fiduciary Net Position	<u>341,084,506</u>	<u>315,521,246</u>								
Net OPEB Liability	(\$12,940,960)	\$11,454,016								
Ratio of Plan Fiduciary Net Position to Total OPEB Liability	103.94%	96.50%								
Covered payroll	N/A	N/A								
Net OPEB Liability as a percentage of covered payroll	N/A	N/A								

Note: Schedule is intended to show 10-year trend. Additional years will be reported as they become available.



Exhibit B

GASB 74 Paragraph 36.c.
SCHEDULE OF EMPLOYER CONTRIBUTIONS
(\$ in Thousands)

Oklahoma Public Employees Retirement System	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Actuarially determined employer contribution	\$5,786	\$6,087								
Actual employer contributions	<u>19,080</u>	<u>18,828</u>								
Annual contribution deficiency (excess)	<u>(\$13,294)</u>	<u>(\$12,741)</u>								
Covered payroll	N/A	N/A								
Actual contributions as a percentage of covered payroll	N/A	N/A								



APPENDIX B

SUMMARY OF MAIN BENEFIT PROVISIONS

Oklahoma Public Employees Retirement System

Following is a summary of the major System provisions used in the actuarial valuation of the System. For purposes of this report, only the post-retirement medical benefit is valued for liabilities. The full benefit provisions are included because they are relevant for assumptions and funding provisions.

Effective date and fiscal year The System became effective January 1, 1964. The fiscal year is July 1 to June 30.

Administration The System is administered by the Oklahoma Public Employees Retirement System Board of Trustees. The Board acts as the fiduciary for the investment and administration of the System.

Employees included All permanent employees of the State of Oklahoma, and any other employer such as a county, county hospital, city or town, conservation districts, circuit engineering districts, and any trust in which a county, city or town participates and is the primary beneficiary, are eligible to join if:

- a) the employee is not eligible for or participating in another retirement system authorized under Oklahoma law, is covered by Social Security and is not participating in the U.S. Civil Service Retirement System; and
- b) the employee is scheduled for at least 1,000 hours per year and salary is not less than the hourly rate of the monthly minimum wage for State employees (for employees of local government employers, not less than the hourly rate of the monthly minimum wage for such employees).

Membership is mandatory for new eligible employees on the first of the month following employment. Effective November 1, 2015, the Plan is closed to most new State employees. Any employee with service in the System prior to November 1, 2015 will continue to be a member or will join the System upon re-employment with a participating employer.

Employer and employee contributions Most State employees except Hazardous Duty employees and most elected officials:



Oklahoma Public Employees Retirement System

Employee: 3.5%
 Employer: 16.5%
 Total: 20.0%

Employer and employee contributions (continued)

Prior to July 1, 2006 the employee contribution rate varied on pay above/below \$25,000 as shown in the chart at the end of this section. This plan provision was changed by the 2006 Legislature.

Before November 1, 2010, elected officials selected a contribution rate of 4.5%, 6%, 7.5%, 8.5%, 9% or 10% which determined the computation factor used in calculating their benefit. Elected officials elected or appointed on or after November 1, 2010 (but before November 1, 2011) were limited to selecting either the 4.5% contribution rate or the 10% contribution rate. Those elected after November 1, 2011 contribute at 3.5% like most non-elected members.

Contributions for Hazardous Duty employees are summarized at the end of this appendix.

Local government employees contribute from 3.5% to 8.5% of pay, depending on the rate chosen by their employers.

Starting in 2004, regular members may make an election to contribute an additional 2.91% of pay and increase their accrual rate for future years of service to 2.5% (referred to as Step-Up Option). Elected officials elected on or after November 1, 2011 may also elect Step-Up.

Contributions are based on compensation defined by the Board.

Contribution Summary: Regular State Contributions (By Statute) For Pay Under \$25,000

Fiscal Year	Employer Contribution	Employee Contribution	Total Contribution	Applicable Salary Cap
1994-1995	11.5%	2.0%	13.5%	\$50,000
1995-1996	11.5%	2.0%	13.5%	\$60,000
1996-1997	12.0%	2.5%	14.5%	\$70,000
1997-1998	12.5%	3.0%	15.5%	\$80,000
1998-1999	12.5%	3.0%	15.5%	No Cap
1999-2005	10.0%	3.0%	13.0%	No Cap
2005-2006	11.5%	3.0%	14.5%	No Cap



Oklahoma Public Employees Retirement System

Employer and employee contributions (continued)

For Pay Between \$25,000 and Cap				
Fiscal Year	Employer Contribution	Employee Contribution	Total Contribution	Applicable Salary Cap
1994-1995	11.5%	3.5%	15.0%	\$50,000
1995-1996	11.5%	3.5%	15.0%	\$60,000
1996-1997	12.0%	3.5%	15.5%	\$70,000
1997-1998	12.5%	3.5%	16.0%	\$80,000
1998-1999	12.5%	3.5%	16.0%	No Cap
1999-2005	10.0%	3.5%	13.5%	No Cap
2005-2006	11.5%	3.5%	15.0%	No Cap

For All Pay			
Fiscal Year	Employer Contribution	Employee Contribution	Total Contribution
2006-2007	12.5%	3.5%	16.0%
2007-2008	13.5%	3.5%	17.0%
2008-2009	14.5%	3.5%	18.0%
2009-2011	15.5%	3.5%	19.0%
2011-2018	16.5%	3.5%	20.0%

Years of Service

Prior Service

All service of the employee prior to the employer's entry date is credited prior service providing the participating employer joined on or before January 1, 1975. Prior service for employees of employers who join after January 1, 1975, may be purchased by the employee. Prior service is allowed for certain active wartime military service (maximum 5 years credit) for members employed prior to July 1, 2000 and for employment with public schools or Board of Regents for Higher Education prior to July 1943. Service need not be continuous employment to be credited.



Oklahoma Public Employees Retirement System

Years of Service

Participating Service

After the employer's entry date, a member's participating service is credited for all periods of employment for which required contributions are made. Service is prorated according to hours worked per month on and after July 1, 1979. Certain active wartime military service is credited, provided the contribution accumulation is not withdrawn. Active and retired members are credited with additional participating service based on their accumulated contributions prior to June 30, 1977 (if not withdrawn prior to retirement), according to the following:

<u>Member Accumulation</u>			<u>Additional Years</u>
\$	1	to \$ 500	1
	501	to 1,000	2
	1,001	to 1,500	3
	1,501	to 2,000	4
	2,001	to More	5

A member who has withdrawn his or her contributions and later returns to membership may repay the amount withdrawn plus interest as determined by the Board to reinstate participating service which was canceled by his or her withdrawal.

A member may receive credit for those years of service as an elected official if the member is not receiving credit for that service in any other public retirement system. The member must pay an amount equal to the actuarial cost to fund the difference between the member's projected benefits with and without the additional service credit.

The total participating service of a member who retires or terminates employment and elects a vested benefit shall include up to one hundred thirty (130) days of unused sick leave accumulated subsequent to August 1, 1959, during the member's employment with any participating employer. Such credit shall be added in terms of whole months. If unused sick leave entitles the member to an additional year of service, the additional cost is borne by the employer. For members joining on or after November 1, 2012, any additional months of unused sick leave credit will be added to the service credit without rounding the total service up to the next higher year. Any cost to the employer will be based on the actual number of months of unused sick leave.



Oklahoma Public Employees Retirement System

Years of Service

Participating Service (continued)

A member may receive credit for those years of credited service accumulated while a member of the Oklahoma Firefighters Pension and Retirement System, the Oklahoma Police Pension and Retirement System, the Uniform Retirement System for Justices and Judges, the Oklahoma Law Enforcement Retirement System, or the Teachers' Retirement System of Oklahoma, if the member is not receiving or eligible to receive retirement credit or benefits from this service in any other public retirement system. The member may receive credit for this service by paying the amount actuarially determined to cover the cost of the previous service.

Credited Service

Credited service equals prior service plus participating service. The result is rounded up to the next year if the number of remaining months is equal to or greater than six. Credited service of members joining on or after November 1, 2012 will not be rounded up. Members will be credited with, and their benefit calculation will be computed on, the actual number of years and months of credited service.

Compensation

The member's basic salary and wages as defined by the Board of Trustees, including amounts contributed to deferred compensation plans. Overtime and moving expenses are excluded.

Final average compensation

The average of the thirty-six (36) highest months of compensation earned within the last ten (10) years of participating service. For members hired on or after July 1, 2013, final average compensation is the average of the sixty (60) highest months of compensation earned within the last ten (10) years of participating service. Final average compensation will be subject to any applicable salary caps and based on salary on which contributions have been made.

For all members hired prior to July 1, 1995, the minimum final average compensation is \$13,800. For members hired on or after July 1, 1995, no minimum is applied until the member has fifteen (15) years of service. For members with between fifteen (15) and twenty (20) years of service, the minimum final average compensation is \$6,900. For a member with more than twenty (20) years of service, the minimum is \$13,800.



Oklahoma Public Employees Retirement System

Normal retirement date

Normal retirement is the earliest of: (1) first day of the month coinciding with or next following the 62nd birthday; or, (2) the first day of the month coinciding with or following the date at which the sum of a member's age and number of years of credited service total eighty (80) if the member was hired prior to July 1, 1992; or (3) following the date at which the sum of member's age and number of years of credited service total ninety (90) if the member was hired after July 1, 1992. Members employed after January 1, 1983 must complete at least six (6) years of full-time equivalent employment with a participating employer before receiving any retirement benefits.

For regular employees hired on or after November 1, 2011, the retirement age is 65. Alternatively, they may retire under the "Rule of 90" if they are at least age 60.

The normal retirement date for elected officials is the first of the month coinciding with or following the official's 60th birthday or the first day of the month coinciding with or following the date at which the sum of the member's age and years of credited service total eighty (80).

For elected officials appointed or elected on or after November 1, 2011, the retirement age is 65 with a minimum of eight (8) years of elected service, or age 62 if they have ten (10) years of elected service.

Normal retirement benefit

The benefit on or after normal retirement, payable monthly for life to non-elected members, is as follows:

2% of final average compensation multiplied by years of credited service.

For members who have elected the Step-Up Option, a 2.5% multiplier is applied to the "stepped-up" full years. Elected officials appointed or elected on or after November 1, 2011, are also eligible for the Step-Up Option.



Oklahoma Public Employees Retirement System

Normal retirement benefit (continued)

The benefit payable monthly for life to elected officials is the greater of 1) the preceding benefit, or 2) the benefit calculated using highest annual compensation as an elected official times credited service multiplied by the following applicable computation factor:

<u>% of Compensation Contributed</u>	<u>% of Highest Annual Compensation</u>
4.5%	1.9%
6.0%	2.5%
7.5%	3.0%
8.5%	3.4%
9.0%	3.6%
10.0%	4.0%

Elected officials who became members after July 1, 1990 must participate in the System as elected officials for at least six (6) years to qualify for the elected official benefit formula on all years of previous non-elected participating service. For elected officials elected or appointed on or after November 1, 2011, the vesting period is eight (8) years.

OPERS members who are elected after August 21, 2008 have a benefit cap of 100% of their highest annual salary. Elected officials who become members after August 21, 2008 (but before November 1, 2011) receive a benefit that consists of two separate calculations. Their non-elected years are multiplied by 2% and their elected years are multiplied by the applicable percentage selected and paid for by the members.

Elected officials who are appointed or elected on or after November 1, 2010 (but before November 1, 2011) have two benefit multiplier options: 1.9% and 4.0%. Those elected after November 1, 2011 contribute at 3.5% like most non-elected members, and have a multiplier of 2%. In addition, they must be age 62 with at least ten (10) years as an elected official, or age 65 with at least eight (8) years as an elected official, to qualify for retirement.



Oklahoma Public Employees Retirement System

Early retirement benefit

A member with at least ten (10) years of participating service may retire as early as age 55. The benefit is determined by the normal retirement formula based on years of credited service and Final Average Compensation (highest annual compensation for elected officials) at termination. The percentage payable at early retirement age is:

<u>Elected Officials</u>		<u>Other Members</u>	
Age	Percentage	Age	Percentage
60	100%	62	100.00%
59	94	61	93.33
58	88	60	86.67
57	82	59	80.00
56	76	58	73.33
55	70	57	66.67
		56	63.33
		55	60.00

The following tables apply to regular and hazardous duty employees employed, or elected officials appointed or elected, on or after November 1, 2011:

<u>Elected Officials</u>		<u>Other Members</u>	
Age	Percentage	Age	Percentage
62	100.00%	65	100.00%
61	93.33	64	93.33
60	86.67	63	86.67
		62	80.00
		61	73.33
		60	66.67



Oklahoma Public Employees Retirement System

Disability benefit

A member with at least eight (8) years of credited service is eligible for a disability benefit provided the member qualifies for disability benefits as certified by the Social Security Administration or the Railroad Retirement Board and having a date of disability within one year after the date last physically on the job. The benefit is determined by the normal retirement formula based on service and salary history at date of disability. The benefit is payable immediately without actuarial reduction. Option A is the only available form of survivor payment for non-elected members.

Vested benefit

A member who terminates after eight (8) years of credited service (six years for most elected officials) is eligible for a vested benefit determined by the normal retirement formula, based on service and compensation to date of termination.

The benefit is payable at age 62 (or age 60 for most elected officials), provided the member's contribution accumulation is not withdrawn and the member has at least six (6) years of full-time equivalent employment. A member with ten (10) or more years of service also has the option of reduced benefits at early retirement age.

Members terminating with less than eight (8) years (or six years for most elected officials) of credited service may elect to receive a refund of their member contribution accumulation.

A limited additional retirement service benefit of \$200 per month is payable up to the total of excess contributions paid by the member for those vested members as of July 1, 1998. This is not applicable for active members who received a transfer of excess contributions or retired members as of July 1, 1998.

For regular employees employed on or after November 1, 2011, a vested benefit is not payable for Normal Retirement until age 65. For elected officials appointed or elected on or after November 1, 2011, a vested benefit requires at least eight (8) years of elected service and is not payable for normal retirement until age 65.



Oklahoma Public Employees Retirement System

Pre-retirement death benefit

For a deceased active member who had met normal, early or vested retirement provisions, the spouse may elect a spouse's benefit. This spouse's benefit is the amount that would have been paid if the member had instead retired and elected the joint and 100% survivor option (Option B). If named as the designated beneficiary, the spouse may elect a refund of the deceased member's contribution accumulation in lieu of the Option B monthly benefit.

In addition to the provision above, the eligible spouse of a deceased elected official with at least six (6) years of elected service or eight (8) years if elected on or after November 1, 2011, and married at least three (3) years immediately preceding death, may elect to receive 50% of the maximum benefit the member would have been eligible to receive. The starting date of benefits is the date the deceased member would have been eligible for early or normal retirement. Benefits cease upon death or remarriage of the surviving spouse.

Any other designated beneficiary of a member other than an eligible spouse will receive a refund of the deceased member's contribution accumulation.

Post-retirement death benefit

Upon the death of a retired member, a \$5,000 lump-sum death benefit will be paid to the member's beneficiary, or estate if there is no beneficiary.



Oklahoma Public Employees Retirement System

Optional form of retirement benefits

The normal form of benefit for an unmarried member, other than an elected official, is a single life monthly annuity with a guaranteed refund of the unpaid employee contribution accumulation. The normal form for a married member is a 50% joint and survivor annuity benefit. Optional forms of payment with actuarial reduction are available to all members retiring under the normal retirement, early retirement or vested retirement provision. These options are:

Option A – Joint and 50% Survivor Annuity with a return to the unreduced amount if the joint annuitant dies.

Option B – Joint and 100% Survivor Annuity with a return to the unreduced amount if the joint annuitant dies.

Option C – Life Annuity with a minimum of 120 monthly payments.

For married members, spousal consent is required for any option other than Option A, or a joint annuitant other than the spouse.

Medicare Gap Benefit Option allows members under age 65 to receive a higher benefit before age 65 (to help pay health insurance premiums) and a permanently lower benefit after age 65.

Post-retirement medical benefit

The System will contribute the lesser of \$105 per month or the Medicare Supplement Premium to the Office of Management and Enterprise Services, Employees Group Insurance Division (or other eligible employer health plans) for members receiving retirement benefits.

Expenses

The expenses of administering the System are paid from the retirement trust fund.



Oklahoma Public Employees Retirement System

Hazardous Duty Members (Department of Corrections Officers, Oklahoma Military Department Firefighters) Benefits

Members covered by the Hazardous Duty Provisions have the retirement eligibility requirements, contribution rates and benefit formula described below.

Department of Corrections:

The normal retirement age is the earliest of: twenty (20) years of service as a member covered by the Department of Corrections Hazardous Duty Provisions; or, the first day of the month coinciding with or next following the 62nd birthday; or, the first day of the month coinciding with or following the date at which the sum of a member's age and number of years of credited service total eighty (80), if the member was hired prior to July 1, 1992, or following the date at which the sum of a member's age and number of years of credited service total ninety (90) if the member was hired after July 1, 1992. Members employed after January 1, 1983 must complete at least six (6) years of full-time equivalent employment with a participating employer before receiving any retirement benefits. The benefit formula is 2.5% of final average compensation, multiplied by the number of years of service as an eligible officer for service, not exceeding twenty (20) years. For service in excess of twenty (20) years, the benefit formula is 2% of final average compensation.

For hazardous duty employees hired on or after November 1, 2011, the normal retirement age is age 65. Alternatively, they may retire under the earliest of (i) the "Rule of 90" if they are at least age 60 or (ii) twenty (20) years of service as a member covered by hazardous duty provisions.

Members eligible for these benefits with at least five (5) years of experience in their positions on or after June 30, 2004 remain eligible to retire after twenty (20) years even if they transfer to positions within DOC that are not eligible to retire after twenty (20) years.

Special Surviving Spouse and Child benefits for any member employed by the Department of Corrections (DOC) killed or mortally wounded during the performance of duty are equal to 2.5% of final average monthly compensation multiplied by the greater of the member's actual service or twenty (20) years.

In addition, an amount of \$400 per month will be paid as long as a child of the deceased member is under the age of 18 (or 22 if enrolled full time at an institution of higher education).



Oklahoma Public Employees Retirement System

Hazardous Duty Members (Department of Corrections Officers, Oklahoma Military Department Firefighters) Benefits (continued)

Contributions for members covered by the Department of Corrections Hazardous Duty Provisions are:

	<u>Year</u>	<u>Up to \$25,000</u>	<u>Above \$25,000</u>
	1994/1995	6.5%	8.0%
	1995/1996	6.5%	8.0%
	1996/1997	7.0%	8.0%
	1997/1998	7.5%	8.0%
	<u>First 20 Years of Service</u>		
		<u>Service Beyond 20 Years</u>	
		<u>Up to \$25,000</u>	<u>Above \$25,000</u>
July 1998 – June 1999	8.0%	N/A	N/A
July 1999 – June 2000	8.0%	N/A	N/A
July 2000 – June 2010	8.0%	N/A	N/A
July 2010 and after	8.0%	3.5%	3.5%

Oklahoma Military Department Firefighters:

The benefit for Oklahoma Military Department firefighters who began employment July 1, 2002 and after is based on a 2.5% benefit multiplier. They are also eligible for full benefits after twenty (20) years as a firefighter and their employee contribution rate is 8%. Oklahoma Military Department firefighters employed prior to July 1, 2002 were given a one-time option to: (a) have their benefit formula, retirement eligibility, and employee contribution rate remain unchanged; (b) apply the new provisions (including the new contribution rate) to service after January 1, 2003; or (c) apply the new benefit formula and retirement eligibility to all of the member's service, apply the 8% contribution rate for service after July 1, 2002, and make a contribution equal to the increase in the actuarial value of the member's retirement benefit.

In contrast to DOC members, the 2.5% formula and 8% contribution rate applies to service after twenty (20) years.



APPENDIX C

STATEMENT OF ACTUARIAL ASSUMPTIONS

Oklahoma Public Employees Retirement System

SUMMARY OF ACTUARIAL ASSUMPTION

Economic Assumptions

Long-term Rate of Return: 7.0% net of investment expenses per annum, compounded annually

Salary Increases: Sample rates below (midpoint of range shown):

<u>Nearest Age</u>	<u>% Increase</u>
20 - 24	9.50
25 - 29	7.80
30 - 34	6.30
35 - 39	5.50
40 - 44	5.20
45 - 49	4.80
50 - 54	4.50
55 - 59	4.30
60 - 64	3.80
65+	3.50

Payroll Growth: 3.50% per year

Ad hoc benefit increase assumptions

Monthly benefits	No increases assumed
Medical Supplement	No increases assumed

Projection of 401(a)(17) compensation limit: Projected with inflation at 2.75%



Oklahoma Public Employees Retirement System

Demographic Assumptions

Annual Rates of Retirement Per 100 Eligible Regular Non-Elected Members

<u>Age</u>	<u>Hired Prior to 11/1/2011</u>		<u>Hired on or After 11/1/2011</u>	
	<u>Those Eligible For Unreduced Retirement</u>	<u>Those Eligible For Reduced Retirement</u>	<u>Those Eligible For Unreduced Retirement</u>	<u>Those Eligible For Reduced Retirement</u>
50	15	N/A	N/A	N/A
51	15	N/A	N/A	N/A
52	15	N/A	N/A	N/A
53	15	N/A	N/A	N/A
54	15	N/A	N/A	N/A
55	10	3	N/A	N/A
56	10	4	N/A	N/A
57	11	4	N/A	N/A
58	12	5	N/A	N/A
59	13	6	N/A	N/A
60	14	6	30/15*	7
61	20	15	30/15*	7
62	25	N/A	30/15*	20
63	15	N/A	30/15*	15
64	15	N/A	30/15*	15
65	30	N/A	30/15*	N/A
66	25	N/A	20	N/A
67	25	N/A	20	N/A
68	25	N/A	20	N/A
69	25	N/A	25	N/A
70	100	N/A	100	N/A

*30 when first eligible to retire and 15 thereafter



Oklahoma Public Employees Retirement System

Demographic Assumptions (continued)

Annual Rates of Retirement Per 100 Eligible Elected Members

<u>Age</u>	<u>Elected Prior to 11/1/2011</u>		<u>Elected on or After 11/1/2011</u>	
	<u>Those Eligible For Unreduced Retirement</u>	<u>Those Eligible For Reduced Retirement</u>	<u>Those Eligible For Unreduced Retirement</u>	<u>Those Eligible For Reduced Retirement</u>
50	25	N/A	N/A	N/A
51	25	N/A	N/A	N/A
52	25	N/A	N/A	N/A
53	25	N/A	N/A	N/A
54	25	N/A	N/A	N/A
55	20	7.0	N/A	N/A
56	20	7.0	N/A	N/A
57	20	7.0	N/A	N/A
58	20	7.0	N/A	N/A
59	20	7.0	N/A	N/A
60	20	N/A	N/A	10
61	20	N/A	N/A	10
62	20	N/A	20	N/A
63	20	N/A	20	N/A
64	20	N/A	20	N/A
65	20	N/A	20	N/A
66	20	N/A	20	N/A
67	35	N/A	35	N/A
68	35	N/A	35	N/A
69-74	35	N/A	35	N/A
75	100	N/A	100	N/A



Oklahoma Public Employees Retirement System

Demographic Assumptions (continued)

Annual Rates of Retirement Per 100 Eligible Hazardous Duty Members

	<u>Hired Prior to 11/1/2011</u>		<u>Hired on or After 11/1/2011</u>				
	<u>Less Than 20 Years of Service</u>	<u>At Least 20 Years of Service</u>	<u>Less Than 20 Years of Service</u>	<u>At Least 20 Years of Service</u>			
Age		Service*	Age	Service*			
50	N/A	20	25	50	N/A	20	25
51	N/A	21	25	51	N/A	21	25
52	N/A	22	20	52	N/A	22	20
53	N/A	23-24	15	53	N/A	23-24	15
54	N/A	25-29	23	54	N/A	25-29	23
55	4	30-34	25	55	N/A	30-34	25
56	5	35+	100	56	N/A	35+	100
57	5			57	N/A		
58	5			58	N/A		
59	5			59	N/A		
60	5			60	7		
61	20			61	20		
62	40			62	20		
63	22			63	20		
64	25			64	20		
65	40			65	40		
66	25			66	25		
67	25			67	23		
68	25			68	22		
69	25			69	21		
70	100			70	100		

*Applicable at all ages with 100% rate at age 70.



Oklahoma Public Employees Retirement System

Demographic Assumptions (continued)

Mortality Rates

Active participants and
non-disabled pensioners

RP-2014 Blue Collar Active/Retiree Healthy Mortality Table with base rates projected to 2025 using Scale MP-2016. For retirees, male rates are multiplied by 95% under age 70 and 105% over age 70, while female rates are multiplied by 90% and 115%. (For the multipliers, 5-year geometric smoothing is applied at age 70.)

Disabled pensioners

Nondisabled retiree mortality set forward 12 years for disabled experience.

Hazardous Duty members

For Department of Corrections officers, we assumed the mortality rate is 10% higher than the above table while the participant is active. This 10% is assumed to be in-line-of-duty.

Disability Rates:

Graduated rates

Disabled rates per 100 members

Nearest	Regular/Elected	Hazardous
Age		Duty
20	0.009	0.009
30	0.009	0.027
40	0.022	0.072
50	0.139	0.225
60	0.300	0.500



Oklahoma Public Employees Retirement System

Demographic Assumptions (continued)

Withdrawal Rates:

<u>Service</u>	<u>Rate</u>
0	24.00%
1	22.00%
2	18.00%
3	14.00%
4	12.00%
5	10.50%
6	9.00%
7	8.00%
8	7.00%
9	6.50%
10	6.00%
11	5.50%
12	5.00%
13	4.75%
14	4.50%
15	4.25%
16	4.00%
17	3.75%
18	3.50%
19	3.25%
20	3.00%
21	2.75%
22	2.50%
23	2.25%
24	2.00%
25	1.75%
26	1.50%
27	1.25%
28+	1.00%



Oklahoma Public Employees Retirement System

Demographic Assumptions (continued)

Probability of Electing Vested Benefit:

Regular Members Only	
<u>Duration</u>	<u>Rate</u>
8	80%
13	85%
18	90%
23	95%
28	100%

Marital Status:

Percentage Married
Age difference

85%
Males are assumed to be four years older than spouses.

Children:

Special death benefits are provided upon the in-line-of-duty death of Department of Corrections employees who have young children. We have assumed the average age of the youngest child of such employees is nine and that 50% of such children will attend an institution of higher education to age 22.

Form of Payment:

Participants are assumed to elect a life-only form of payment, except elected members who receive an automatic 50% survivor benefit for an eligible spouse.



Oklahoma Public Employees Retirement System

Demographic Assumptions (continued)

Assumed age for commencement of deferred benefits:

Currently active members assumed to terminate in the future prior to retirement eligibility are assumed to commence benefits at age 62 (non-elected members) or age 60 (elected members).

Currently active members hired on or after 11/1/2011 assumed to terminate in the future prior to retirement eligibility are assumed to commence benefits at age 65.

Currently inactive members with deferred benefits are assumed to commence benefits on a date provided by OPERS.

Provision for expenses:

Administrative expenses, as budgeted by the Oklahoma Public Employees Retirement System.