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GASB STATEMENT NO. 68 REPORT

FOR THE STATE OF OKLAHOMA

PUBLIC EMPLOYEES RETIREMENT SYSTEM

PREPARED AS OF JUNE 30, 2019





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November 20, 2019

Mr. Joseph Fox
Executive Director
Oklahoma Public Employees Retirement System
5400 N. Grand Boulevard, Suite 200
Oklahoma City, OK 73112

Dear Mr. Fox:

Presented in this report is information to assist the Oklahoma Public Employees Retirement System in providing information required under the Governmental Accounting Standards Board (GASB) Statement No. 68 to participating employers. GASB Statement No. 68 establishes accounting and financial reporting requirements for governmental employers who provide pension benefits to their employees through a trust. This report has been prepared as of June 30, 2019. The calculations in this report have been made on a basis that is consistent with our understanding of this accounting standard (GASB 68).

The annual actuarial valuation used as the basis for much of the information presented in this report was performed as of July 1, 2019. 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 Plan's funding policy.

To the best of our knowledge, the information contained in this report is complete and accurate. We note that the allocation of net pension liability, pension expense, and deferred inflows and outflows to participating employers under GASB 68 will be provided by the Oklahoma Public Employees Retirement System and, therefore, is not included in this report. 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 68.

3550 Busbee Pkwy, Suite 250, Kennesaw, GA 30144

Phone (678) 388-1700 • Fax (678) 388-1730

www.CavMacConsulting.com

Offices in Kennesaw, GA • Bellevue, NE



Mr. Joseph Fox
November 20, 2019
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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 68 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, appearing to read 'Alisa Bennett', with a stylized, cursive script.

Alisa Bennett, FSA, EA, FCA, MAAA
President

A handwritten signature in blue ink, appearing to read 'Brent A. Banister', with a stylized, cursive script.

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



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GASB STATEMENT NO. 68

OKLAHOMA PUBLIC EMPLOYEES RETIREMENT SYSTEM

SECTION I - SUMMARY OF PRINCIPAL RESULTS

Oklahoma Public Employees Retirement System	
Valuation Date (VD):	July 1, 2019
Prior Measurement Date:	June 30, 2018
Measurement Date (MD):	June 30, 2019
Membership Data:	
Retirees and Beneficiaries	35,869
Inactive Vested Members	6,106
Inactive Nonvested Members	54,667
Active Employees	<u>34,536</u>
Total	131,178
Single Equivalent Interest Rate (SEIR):	
Long-Term Expected Rate of Return	7.00%
Municipal Bond Index Rate at Prior Measurement Date	3.89%
Municipal Bond Index Rate at Measurement Date	3.50%
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 Pension Liability:	
Total Pension Liability (TPL)	\$9,726,326,176
Fiduciary Net Position (FNP)	<u>9,593,138,099</u>
Net Pension Liability (NPL = TPL – FNP)	\$133,188,077
FNP as a percentage of TPL	98.63%
Pension Expense:	\$215,531,492
Deferred Outflows of Resources:	\$205,033,791
Deferred Inflows of Resources:	\$276,562,215



SECTION II – INTRODUCTION

The Governmental Accounting Standards Board issued Statement No. 68 (GASB 68), “*Accounting and Financial Reporting for Pensions*” in June 2012. GASB 68’s effective date for employers is the first fiscal year beginning after June 15, 2014. This report, prepared as of June 30, 2019 (the Measurement Date), presents information to assist the Oklahoma Public Employees Retirement System in providing the required information under GASB 68 to participating employers. Much of the material provided in this report, including the net pension liability, is based on the results of the GASB 67 report for the Oklahoma Public Employees Retirement System, which was issued November 20, 2019. See that report for more information on the member data, actuarial assumptions and methods used in developing the GASB 67 results.

GASB 68 requires the inclusion of a proportionate share of the Net Pension Liability (NPL) on the participating employer’s balance sheet and a determination of a Pension Expense (PE), which may bear little relationship to the funding requirements for the Oklahoma Public Employees Retirement System. In fact, it is possible in some years for the NPL to be an asset or the PE to be an income item. The NPL is set equal to the Total Pension Liability (TPL) minus the Fiduciary Net Position (FNP). The benefit provisions recognized in the calculation of the TPL are summarized in Appendix B. The Oklahoma Public Employees Retirement System is a cost-sharing multiple employer plan so the NPL and PE are allocated among the participating employers and non-employer entities. Those amounts, which are needed for the employer’s financial statements, will be determined by the Oklahoma Public Employees Retirement System.

PE includes amounts for Service Cost (the Normal Cost under Entry Age Normal (EAN) for the year), interest on the TPL, employee contributions, administrative expenses, other cash flows during the year, recognition of increases/decreases in the TPL due to changes in the benefit structure, actual versus expected experience, actuarial assumption changes, and recognition of investment gains/losses. The actual experience and assumption change impacts are recognized over the average expected remaining service life of the System membership as of the beginning of the measurement period, while investment gains/losses are recognized equally over five years. The development of the PE is shown in Section III. The unrecognized portions of each year’s experience, assumption changes and investment gains/losses are used to develop Deferred Inflows and Outflows of Resources, which also must be included on the employer’s Statement of Net Position.

Among the items needed for the TPL calculation is a discount rate, as defined by GASB, or a Single Equivalent Interest Rate (SEIR). To determine the SEIR, the FNP must be projected into the future for as long as there are anticipated benefits payable under the plan provisions applicable to the membership 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) (3.50%).

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, 2018 or the June 30, 2019 TPL. The SEIR for both the Measurement Date and the Prior Measurement Date is 7.00%, the long-term assumed rate of return on investments, and meets the requirements of GASB 67 and 68.

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 67 and 68. 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 required aggregate calculations, presented in the order laid out in GASB 68 for note disclosure and Required Supplementary Information (RSI). **The Oklahoma Public Employees Retirement System will prepare the calculation of the proportionate share of the NPL, Pension Expense and Deferred Inflows and Outflows for each participating employer or non-employer contributing entity.**



SECTION III – PENSION EXPENSE

As noted earlier, the collective Pension Expense (PE) consists of a number of different items. GASB 68 refers to the first as Service Cost, which is the Normal Cost using the Entry Age Normal (EAN) actuarial funding method. The second item is interest on the TPL at the long-term rate of return in effect as of the Prior Measurement Date.

The next three items refer to any changes that occurred in the TPL (i.e., actuarial accrued liability (AAL) under EAN) due to:

- benefit changes,
- actual versus expected experience, or
- changes in actuarial assumptions.

Benefit changes, which are reflected immediately, will increase PE if there is a benefit improvement for existing System members, or decrease PE if there is a benefit reduction. For the year ended June 30, 2019, there were no benefit changes to be recognized.

The next item to be recognized is the portion of current year changes in TPL due to actual versus expected experience for the year. The portion to recognize in the current year is determined by spreading the total change over the average expected remaining service life of the entire System membership at the beginning of the measurement period. The average expected remaining service life of active members is the average number of years the active members are expected to remain in covered employment. At the beginning of the measurement period, this number is 9.33. The average expected remaining service life of the inactive members is zero. Therefore, the recognition period is the weighted average of these two amounts, or 2.59 years.

The last item under changes in TPL is changes in actuarial assumptions or other inputs. There were no changes in the actuarial assumptions or other inputs since the Prior Measurement Date. If there was such a change, the change would be recognized over the average expected remaining service life of the entire System membership, using the same approach applied to experience gains and losses, as described in the prior paragraph.

Member contributions for the year and projected earnings on the FNP at the long-term expected rate of return are subtracted from the amount determined thus far. One-fifth of current-period difference between projected and actual earnings on the FNP is recognized in the PE.

The current year portions of previously determined experience, assumption changes and earnings amounts, recognized as Deferred Outflows of Resources and Deferred Inflows of Resources are included next. Deferred Outflows of Resources are added to the PE while Deferred Inflows of Resources are subtracted from the PE. Finally, administrative expenses and other miscellaneous items are included.

The calculation of the collective PE for the year ended June 30, 2019 is shown in the following table.



**Collective Pension Expense
For the Year Ended June 30, 2019**

Oklahoma Public Employees Retirement System	2019
Service Cost	\$162,170,522
Interest on the Total Pension Liability	647,009,007
Current-period Benefit Changes	0
Expensed portion of current-period difference between expected and actual experience in the total pension liability	(797,318)
Expensed portion of current-period changes of assumptions	0
Member Contributions	(66,566,433)
Projected Earnings on Plan Investments	(644,529,396)
Expensed portion of current-period differences between actual and projected earnings on plan investments	20,058,436
Administrative Expense	5,563,902
Other	0
Recognition of beginning deferred outflows of resources as pension expense	282,914,951
Recognition of beginning deferred inflows of resources as pension expense	(190,292,179)
Total Pension Expense	\$215,531,492

Note: Average expected remaining service life for all members is 2.59.



SECTION IV – NOTES TO FINANCIAL STATEMENTS

The material presented herein will follow the order presented in GASB 68. Paragraph numbers are provided for ease of reference. Amounts are shown in the aggregate. The Oklahoma Public Employees Retirement System will determine the proportionate share of certain amounts for individual employers as required by GASB 68.

Paragraph 74: The information required is to be prepared by the System and/or the individual employer.

Paragraph 75: The information required is to be prepared by the individual employer.

Paragraph 76(a) – (d): The information required is to be supplied by the System.

Paragraph 77: This paragraph requires information to be disclosed regarding the actuarial assumptions and other inputs used to measure the TPL. The complete set of actuarial assumptions and other inputs utilized in developing the TPL are outlined in Appendix C. The TPL as of June 30, 2019 was determined based on an actuarial valuation prepared as of July 1, 2019, 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	3.89 percent
Measurement Date	3.50 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



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 78

(a): Discount rate (SEIR). The discount rate used to measure the TPL at June 30, 2019 was 7.00 percent. There was no change in the discount rate since the Prior Measurement Date.

(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 TPL.



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 67 and 68. 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 pension 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 pension 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 3.50% on the Measurement Date.

(e): Period 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 NPL to changes in the discount rate. The following presents the NPL of the System, calculated using the discount rate of 7.00 percent, as well as the System’s NPL 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. The Oklahoma Public Employees Retirement System will provide the individual employer’s proportionate share calculation.

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Total Pension Liability	\$10,797,366,359	\$9,726,326,176	\$9,111,180,096
Fiduciary Net Position	<u>9,593,138,099</u>	<u>9,593,138,099</u>	<u>9,593,138,099</u>
Net Pension Liability	\$1,204,228,260	\$133,188,077	(\$774,849,359)

Paragraph 79: The required information will be supplied by the System.



Paragraph 80:

(a)-(b): This information will be supplied by the System.

(c): The Measurement Date of the collective NPL is June 30, 2019. The TPL as of June 30, 2019 was determined based on the annual actuarial funding valuation report prepared as of July 1, 2019.

(d): There were no changes in the actuarial assumptions or other inputs that affected the measurement of the TPL since the Prior Measurement Date.

(e): There was no change in the benefit terms that affected measurement of the TPL since the Prior Measurement Date.

(f): The information will be supplied by the System.

(g): Please see Section III for the development of the collective PE. The System will provide the individual employer amounts.

(h): Since certain expense items are recognized over closed periods each year, the deferred portions of these items must be tracked annually. If the amounts will increase PE they are labeled Deferred Outflows of Resources. If the amounts serve to reduce PE they are labeled Deferred Inflows of Resources. The recognition of these amounts is accomplished on a level dollar basis, with no interest included in the deferred amounts. Experience gains/losses and the impact of changes in actuarial assumptions, or other inputs, if any, are recognized over the average expected remaining service life of the active and inactive System members at the beginning of the measurement period. Investment gains and losses are recognized over a fixed five-year period.



The following tables provide a summary of the amounts of the collective Deferred Outflows of Resources and collective Deferred Inflows of Resources as of the Measurement Date (June 30, 2019). Per GASB 68, reporting of the differences between projected and actual earnings should be on a net basis, with only one Deferred Outflow or Inflow. This information is provided in the following table.

	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows/(Inflows) of Resources
Differences between expected and actual experience	\$0	\$31,340,979	(\$31,340,979)
Changes of assumptions	0	0	0
Differences between projected and actual earnings	<u>205,033,791</u>	<u>245,221,236</u>	<u>(40,187,445)</u>
Total	\$205,033,791	\$276,562,215	(\$71,528,424)



The following tables show the Deferred Outflows of Resources and Deferred Inflows of Resources separately to provide additional detail.

Oklahoma Public Employees Retirement System - Deferred Outflows of Resources				
	June 30, 2018	Additions	Recognition	June 30, 2019
Differences between expected and actual experience				
FY 2015 Base	\$ 0	\$ 0	\$ 0	\$ 0
FY 2016 Base	0	0	0	0
FY 2017 Base	0	0	0	0
FY 2018 Base	0	0	0	0
FY 2019 Base	0	0	0	0
Total	\$ 0	\$ 0	\$ 0	\$ 0
Changes of assumptions				
FY 2015 Base	\$ 0	\$ 0	\$ 0	\$ 0
FY 2016 Base	6,074,659	0	6,074,659	0
FY 2017 Base	77,804,292	0	77,804,292	0
FY 2018 Base	0	0	0	0
FY 2019 Base	0	0	0	0
Total	\$ 83,878,951	\$ 0	\$ 83,878,951	\$ 0
Differences between projected and actual earnings				
FY 2015 Base	\$ 74,235,951	\$ 0	\$ 74,235,951	\$ 0
FY 2016 Base	249,600,096	0	124,800,049	124,800,047
FY 2017 Base	0	0	0	0
FY 2018 Base	0	0	0	0
FY 2019 Base	0	100,292,180	20,058,436	80,233,744
Total	\$ 323,836,047	\$ 100,292,180	\$ 219,094,436	\$ 205,033,791
Total	\$ 407,714,998	\$ 100,292,180	\$ 302,973,387	\$ 205,033,791



Oklahoma Public Employees Retirement System - Deferred Inflows of Resources				
	June 30, 2018	Additions	Recognition	June 30, 2019
Differences between expected and actual experience				
FY 2015 Base	\$ 0	\$ 0	\$ 0	\$ 0
FY 2016 Base	1,369,983	0	1,369,983	0
FY 2017 Base	38,304,665	0	38,304,665	0
FY 2018 Base	70,170,901	0	40,097,658	30,073,243
FY 2019 Base	0	2,065,054	797,318	1,267,736
Total	\$ 109,845,549	\$ 2,065,054	\$ 80,569,624	\$ 31,340,979
Changes of assumptions				
FY 2015 Base	\$ 0	\$ 0	\$ 0	\$ 0
FY 2016 Base	0	0	0	0
FY 2017 Base	0	0	0	0
FY 2018 Base	0	0	0	0
FY 2019 Base	0	0	0	0
Total	\$ 0	\$ 0	\$ 0	\$ 0
Differences between projected and actual earnings				
FY 2015 Base	\$ 0	\$ 0	\$ 0	\$ 0
FY 2016 Base	0	0	0	0
FY 2017 Base	259,015,146	0	86,338,382	172,676,764
FY 2018 Base	96,725,963	0	24,181,491	72,544,472
FY 2019 Base	0	0	0	0
Total	\$ 355,741,109	\$ 0	\$ 110,519,873	\$ 245,221,236
Total	\$ 465,586,658	\$ 2,065,054	\$ 191,089,497	\$ 276,562,215

The System will provide the individual employer's balances of the collective Deferred Outflows of Resources and collective Deferred Inflows of Resources.



(i): Collective amounts reported as Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions will be recognized in PE in future years as follows:

Year Ended June 30:	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows/(Inflows) of Resources
2020	\$144,858,483	\$141,390,434	\$3,468,049
2021	20,058,436	110,990,291	(90,931,855)
2022	20,058,436	24,181,490	(4,123,054)
2023	20,058,436	0	20,058,436
2024	0	0	0
Thereafter	0	0	0

The System will provide the individual employers' balances of the Deferred Outflows of Resources and Deferred Inflows of Resources.

(j): This will be provided by the System.



SECTION V – REQUIRED SUPPLEMENTARY INFORMATION

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

Paragraphs 81(a) and (b): This information will be provided by the System.

Paragraph 82: Information about factors that significantly affect trends in the amounts reported in the schedules required by paragraph 81 should be presented as notes to the schedules. At this point only five years are being reported, but comments on additional years will be added as they occur.

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:

2018: House Bill 1340, enacted in 2018, provides a stipend for members of each system who have been retired for five years as of October 1, 2018. The stipend amount is based on the funding level of the system. OPERS members will receive the lesser of 2% of the gross annual retirement amount or \$1,200. The bill also provides a minimum payment of \$350 for members with 20 years of service. The effective date of the stipend is October 1, 2018.

2017: None

2016: None

2015: None

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.



Changes in actuarial assumptions:

7/1/2018 valuation:

- None.

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.

7/1/2016 valuation:

- Decrease the investment return from 7.50% to 7.25%.

7/1/2015 valuation:

- None.

7/1/2014 valuation:

- Withdrawal rates were revised.
- Disability rates were revised.
- Retirement rates were revised.
- Salary scale assumption was revised.
- Probability of electing a vested benefit assumption was revised.



APPENDIX A

ADDITIONAL INFORMATION

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY

Fiscal Year Ended June 30, 2019

Oklahoma Public Employees Retirement System			
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a) – (b)
Balances at June 30, 2018	\$9,555,990,069	\$9,360,947,061	\$195,043,008
Changes for the year:			
Service cost	162,170,522		162,170,522
Interest	647,009,007		647,009,007
Benefit changes	0		0
Difference between expected and actual experience	(2,065,054)		(2,065,054)
Changes in assumptions	0		0
Contributions - employer		263,729,659	(263,729,659)
Contributions - non-employer		0	0
Contributions - member		66,566,433	(66,566,433)
Net investment income		544,237,216	(544,237,216)
Benefit payments, including refunds of employee contributions	(636,778,368)	(636,778,368)	0
Administrative expense		(5,563,902)	5,563,902
Other changes		0	0
Net changes	<u>170,336,107</u>	<u>232,191,038</u>	<u>(61,854,931)</u>
Balances at June 30, 2019	\$9,726,326,176	\$9,593,138,099	\$133,188,077



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, the post-retirement medical benefit is excluded 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 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	<p>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:</p> <p>Option A – Joint and 50% Survivor Annuity with a return to the unreduced amount if the joint annuitant dies.</p> <p>Option B – Joint and 100% Survivor Annuity with a return to the unreduced amount if the joint annuitant dies.</p> <p>Option C – Life Annuity with a minimum of 120 monthly payments.</p> <p>For married members, spousal consent is required for any option other than Option A, or a joint annuitant other than the spouse.</p> <p>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.</p>
Post-retirement medical benefit	<p>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.</p>
Expenses	<p>The expenses of administering the System are paid from the retirement trust fund.</p>



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 ASSUMPTIONS

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</u>		<u>At Least 20</u>		<u>Less Than 20</u>		<u>At Least 20</u>	
<u>Years of Service</u>		<u>Years of Service</u>		<u>Years of Service</u>		<u>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
nondisabled 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		Hazardous
<u>Age</u>	<u>Regular/Elect</u>	<u>Duty</u>
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.