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# OKLAHOMA POLICE PENSION

# AND RETIREMENT SYSTEM

# GASB STATEMENT NO. 67 REPORT

## PREPARED AS OF JUNE 30, 2016

Cavanaugh Macdonald
CONSULTING, LLC
*The experience and dedication you deserve*

September 21, 2016

Mr. Steven K. Snyder
Executive Director / Chief Investment Officer
Oklahoma Police Pension and Retirement System
1001 NW 63rd Street, Suite 305
Oklahoma City, OK 73116-7335

Dear Mr. Snyder:

Presented in this report is information to assist the Oklahoma Police Pension and Retirement System in meeting the requirements of the Governmental Accounting Standards Board (GASB) Statement No. 67. The information is presented for the June 30, 2016 Measurement Date. The calculations in this report have been made on a basis that is consistent with our understanding of this accounting standard (GASB 67).

The annual actuarial valuation used as a basis for much of the information presented in this report was performed as of July 1, 2016. The valuation was based upon data, furnished by the System's 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. Note that information from July 1, 2015 was prepared by the prior actuary.

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 67.

3906 Raynor Pkwy, Suite 106, Bellevue, NE 68123
Phone (402) 905-4461 • Fax (402) 905-4464
www.CavMacConsulting.com
Offices in Englewood, CO • Kennesaw, GA • Bellevue, NE

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 67 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, Brent A. Banister, FSA and Joe Nichols, ASA 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,

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

Joe Nichols, ASA, MAAA, EA, FCA, MSPA
Senior Actuary

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**REQUIRED INFORMATION FOR THE**

**OKLAHOMA POLICE PENSION AND RETIREMENT SYSETM**

## SUMMARY OF PRINCIPAL RESULTS

| | |
|---|---|
| **Valuation Date (VD):** | July 1, 2016 |
| **Prior Measurement Date:** | June 30, 2015 |
| **Measurement Date (MD):** | June 30, 2016 |
| | |
| **Membership Data:** | |
| Retirees and Beneficiaries | 3,410 |
| Disabled Members | 140 |
| Members in DOP | 19 |
| Inactive Vested Members | 132 |
| Inactive Nonvested Members | 669 |
| Active Employees | 4,679 |
| Total | 9,049 |
| | |
| **Single Equivalent Interest Rate (SEIR):** | |
| Long-Term Expected Rate of Return | 7.50% |
| Municipal Bond Index Rate at Prior Measurement Date | 3.82% |
| Municipal Bond Index Rate at Measurement Date | 3.01% |
| Year in which Fiduciary Net Position is Projected to be Depleted | N/A |
| Single Equivalent Interest Rate at Prior Measurement Date | 7.50% |
| Single Equivalent Interest Rate at Measurement Date | 7.50% |
| | |
| **Net Pension Liability:** | |
| Total Pension Liability (TPL) | $2,354,815,000 |
| Fiduciary Net Position (FNP) | 2,201,671,000 |
| Net Pension Liability (NPL = TPL – FNP) | $153,144,000 |
| FNP as a percentage of TPL | 93.50% |

## INTRODUCTION

The Governmental Accounting Standards Board issued Statement No. 67 (GASB 67), *"Financial Reporting for Pension Plans"*, in June 2012. Based on the provisions of GASB 67, the Oklahoma Police Pension and Retirement System (System) is a cost-sharing multiple employer plan.

This report, prepared as of June 30, 2016 (the Measurement Date), presents information to assist the Oklahoma Police Pension and Retirement System in meeting the requirements of GASB 67. 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, 2016 (the Valuation Date). The results of that valuation were detailed in a report dated September 21, 2016.

Among the items needed for the liability calculation is the discount rate, or Single Equivalent Interest Rate (SEIR), as described by GASB 67. To determine the SEIR, the FNP must be projected, using GASB 67 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 Bond Buyers General Obligation 20-year Municipal Bond Index Rate published monthly by the Board of Governors of the Federal Reserve System.

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, 2015 or the June 30, 2016 TPL. The SEIR for both the Measurement Date and the Prior Measurement Date is 7.50%, the long-term assumed rate of return on investments. Please see our information for Paragraph 31.b.(1) for more explanation of the development of the SEIR.

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. 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 for the Oklahoma Police Pension and Retirement System, presented in the order laid out in GASB 67 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 67. Paragraph numbers are provided for ease of reference.

**Paragraphs 30.a. (1)-(3):** This information will be supplied by the System.

**Paragraph 30.a. (4):** The data required regarding the membership of the System was furnished by the System. The following table summarizes the membership of the System as of July 1, 2015 and July 1, 2016, the date of the valuation used to determine the June 30, 2016 TPL.

In addition to membership counts, the Average expected remaining service life for all members was included. This number is not needed for GASB 67 reporting, but will need to be used as the recognition period for GASB 68 reporting.

**Membership**

| | Number as of July 1, | |
|---|---|---|
| | 2016 | 2015 |
| Inactive Members Or Their Beneficiaries Currently Receiving Benefits | 3,410 | 3,309 |
| Disabled Members | 140 | 139 |
| Members in DOP | 19 | 22 |
| Inactive Members Entitled To But Not Yet Receiving Benefits | 132 | 125 |
| Inactive Nonvested Members | 669 | 668 |
| Active Members | 4,679 | 4,570 |
| Total | 9,049 | 8,833 |
| Average expected remaining service life for all members | 5.72 | 5.68* |

* Prepared by Cavanaugh Macdonald as part of our replication.

**Paragraphs 30.a. (5)-(6) and Paragraphs 30.b.-f.:** This information will be supplied by the System.

**Paragraph 31.a. (1)-(4):** As stated earlier, the NPL is equal to the TPL minus the FNP. That result, as of June 30, 2016, is presented in the following table.

| Fiscal Year Ending June 30, 2016 | | |
|---|---|---|
| Total Pension Liability | $ | 2,354,815,000 |
| Fiduciary Net Position | | 2,201,671,000 |
| Net Pension Liability | $ | 153,144,000 |
| Ratio of Fiduciary Net Position to Total Pension Liability | | 93.50% |

**Paragraph 31.b.:** 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 the July 1, 2016 valuation report. The TPL, as of June 30, 2016, was determined based on an actuarial valuation prepared as of July 1, 2016, using the following key actuarial assumptions and other inputs:

| | |
|---|---|
| Price Inflation | 3.00 percent |
| Wage Inflation | 4.00 percent |
| Salary increases, including wage inflation | 4.50 to 17.00 percent |
| Long-term Rate of Return, net of investment expense, including price inflation | 7.50 percent |
| Municipal Bond Index Rate | |
| Prior Measurement Date | 3.82 percent |
| Measurement Date | 3.01 percent |
| Year FNP is projected to be depleted | N/A |
| Single Equivalent Interest Rate, net of investment expense, including price inflation | |
| Prior Measurement Date | 7.50 percent |
| Measurement Date | 7.50 percent |

| | |
|---|---|
| Mortality | Pre-retirement mortality rates were based on the RP-2000 Blue Collar Healthy Combined Table (Fully generational using Scale AA) with age set back four years.<br><br>Post-retirement mortality rates were based on the RP-2000 Blue Collar Healthy Combined Table (Fully generational using Scale AA).<br><br>Disabled pensioners mortality rates were based on the Blue Collar Healthy Combined Table with age set forward four years. |

The most recent experience study was performed for the period July 1, 2007 through June 30, 2012 by the prior actuary, Buck Consultants.

**Paragraph 31.b.(1)**

**(a) Discount rate (SEIR):** The discount rate used to measure the TPL at June 30, 2016 was 7.50 percent. There was no change in the SEIR since the Prior Measurement Date.

**(b) Projected cash flows:** The projection of cash flows used to determine the discount rate was performed in accordance with GASB 67. We assumed that contributions from members, state agencies, insurance premium taxes and other state sources will be made at the current contribution rates as set out in state statute:

a. Employee contribution rate: 8.0% of base salary.
b. Municipality contribution rate: 13.0% of base salary.
c. State contributions: 14.0% of insurance premium tax collected. The dollar amount was assumed to increase with price inflation for all future years.
d. 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.

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 7.50% 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. 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 regular experience studies prepared for the System. The most recent experience study was performed for the period July 1, 2007 through June 30, 2012 by the prior actuary, Buck Consultants. 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 may cover a shorter investment horizon and, therefore, 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 3.01% on the Measurement Date.

**(e) Periods of projected benefit payments:** Projected future benefit payments for all current members of the System were projected through 2115.

**(f) Assumed asset allocation**: This will be provided by the System.

(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 7.50 percent, as well as the System's NPL calculated using a discount rate that is 1-percentage-point lower (6.50 percent) or 1-percentage-point higher (8.50 percent) than the current rate:

| | 1% Decrease (6.50%) | Current Discount Rate (7.50%) | 1% Increase (8.50%) |
|---|---|---|---|
| Net Pension Liability | $401,800,000 | $153,144,000 | ($56,808,000) |

**Paragraph 31.c.:** The TPL at June 30, 2016 is based upon an actuarial valuation prepared as of July 1, 2016.

## 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 32.a.-c.:** The required schedules are provided in Appendix A.
> **Paragraph 32.d.:** The money-weighted rates of return will be supplied by the System.

**Paragraph 34**: 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 were made by the Oklahoma Legislature and reflected in the valuation performed as of July 1 listed below:

None

***Changes in actuarial assumptions:***

None

***Method and assumptions used in calculations of actuarially determined contributions.***

The System is funded with fixed contribution rates for both members and the municipality. In addition, the State contributed a fixed rate of insurance premium taxes. The Actuarially Determined Contributions in the *Schedule of Employer Contributions* are calculated as of the beginning of the plan year in which contributions are reported.

The following actuarial methods and assumptions were used to determine the Actuarially Determined Contribution reported in the most recent plan year, July 1, 2015 to June 30, 2016 (based on the July 1, 2015 actuarial valuation):

| | |
|---|---|
| Actuarial cost method | Entry age |
| Amortization method | Level dollar amount, open |
| Remaining amortization period | 5 years |
| Asset valuation method | 5-year moving average |
| Price Inflation | 3.00 percent |
| Salary increases, including inflation | 4.50 to 17.00 percent |
| Long-term Rate of Return, net of investment expense, including price inflation | 7.50 percent |

Please see the information presented earlier in regard to Paragraph 34 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*.

# APPENDIX A

# REQUIRED SUPPLEMENTARY INFORMATION

# Exhibit A

## GASB 67 Paragraph 32(a) and (b)
### SCHEDULE OF CHANGES IN THE EMPLOYERS' NET PENSION LIABILITY

| | 2016 | 2015 |
|---|---|---|
| **Total Pension Liability** | | |
| Service Cost | $58,694,272 | $54,592,585 |
| Interest | 165,076,048 | 164,140,743 |
| Benefit term changes | 0 | 0 |
| Differences between expected and actual experience | 596,254 | (12,764,056) |
| Assumption changes | 0 | 0 |
| Benefit payments, including member refunds | (138,625,000) | (141,693,000) |
| **Net change in Total Pension Liability** | $85,741,574 | $64,276,272 |
| | | |
| **Total Pension Liability - beginning** | $2,269,073,426 | $2,204,797,154 |
| **Total Pension Liability - ending (a)** | $2,354,815,000 | $2,269,073,426 |
| | | |
| **Plan Fiduciary Net Position** | | |
| Employer contributions | $38,533,000 | $37,261,000 |
| Non-Employer contributions | 35,915,000 | 35,490,000 |
| Employee contributions | 23,787,000 | 22,867,000 |
| Net investment income | (21,104,000) | 74,554,000 |
| Benefit payments, including member refunds | (138,625,000) | (141,693,000) |
| Administrative expenses | (1,831,000) | (1,949,000) |
| Other changes | 0 | 0 |
| **Net change in Plan Fiduciary Net Position** | ($63,325,000) | $26,530,000 |
| | | |
| **Plan Fiduciary Net Position – beginning** | $2,264,996,000 | $2,238,466,000 |
| **Plan Fiduciary Net Position - ending (b)** | $2,201,671,000 | $2,264,996,000 |
| | | |
| **Net Pension Liability - ending (a) - (b)** | $153,144,000 | $4,077,426 |
| | | |
| **Plan Fiduciary Net Position as a percentage of the Total Pension Liability** | 93.50% | 99.82% |
| | | |
| **Covered payroll** | $296,407,692 | $295,307,065 |
| **Employers' Net Pension Liability as a percentage of covered payroll** | 51.67% | 1.38% |

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

Results prior to 2016 were provided by the prior actuary.

## Exhibit B

## GASB 67 Paragraph 32(c)
**SCHEDULE OF EMPLOYER CONTRIBUTIONS**

| | 2016 | 2015 |
|---|---|---|
| Actuarially determined employer contribution | $45,053,969 | $63,908,114 |
| Actual employer contributions | $38,533,000 | $37,261,000 |
| Actual non-employer contributions | 35,915,000 | 35,490,000 |
| Total contributions | 74,448,000 | 72,751,000 |
| Annual contribution deficiency (excess) | ($29,394,031) | ($8,842,886) |
| Covered-employee payroll | $296,407,692 | $295,307,065 |
| Actual contributions as a percentage of covered-employee payroll | 25.12% | 24.64% |

Note: Schedule is intended to show 10-year trend. Additional years will be reported as they become available. Results prior to 2016 were provided by the prior actuary.

# APPENDIX B

## SUMMARY OF MAIN BENEFIT PROVISIONS

Please refer to the July 1, 2016 actuarial valuation report.

## APPENDIX C

### STATEMENT OF ACTUARIAL ASSUMPTIONS

Please refer to the July 1, 2016 actuarial valuation report.