

Oklahoma Police Pension and Retirement System

Actuarial Valuation Report
as of July 1, 2015



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Highlights: Purpose

This report has been prepared by Buck Consultants at Xerox for the Oklahoma Police Pension and Retirement System to:

- Present the results of a valuation of the Oklahoma Police Pension and Retirement System as of July 1, 2015;
- Review experience under the System for the year ended June 30, 2015; and
- Provide reporting and disclosure information for auditors' reports, governmental agencies and other interested parties.

The main financial highlights are:

- The funded status of the System increased since the prior valuation as indicated by the table below.

GASB No. 25 Funded Status (\$000,000)	July 1, 2015	July 1, 2014
Accrued Liability	\$ 2,269.1	\$ 2,204.8
Actuarial Value of Assets	\$ 2,229.3	\$ 2,086.3
Unfunded Accrued Liability	\$ 39.8	\$ 118.5
Funded Ratio	98.2%	94.6%

- The required state contribution for the System decreased from \$26.4 million to \$6.4 million.

Contribution Summary (\$000,000)	July 1, 2015	July 1, 2014
Total Required Contribution	\$ 68.1	\$ 86.9
Expected Employee Contributions	23.5	23.0
Expected Municipality Contributions	38.3	37.5
Required State Contribution	\$ 6.3	\$ 26.4
--As a Percentage of Total Payroll	2.2%	9.1%

Highlights: Summary of Principal Valuation Results

A summary of principal valuation results from the current valuation and the prior valuation follows. Any changes in actuarial assumptions, methods or system provisions between the two valuations are described herein.

	Actuarial Valuation as of	
	July 1, 2015	July 1, 2014
Summary of Costs		
Required State Contribution for Current Year	\$ 6,391,031	\$ 26,428,620
Actual State Contribution Received in Prior Year ⁽¹⁾	\$ 35,490,000	\$ 31,329,000
Funded Status		
Actuarial Accrued Liability	\$ 2,269,073,426	\$ 2,204,797,154
Actuarial Value of Assets	\$ 2,229,272,000	\$ 2,086,297,000
Unfunded Actuarial Accrued Liability	\$ 39,801,426	\$ 118,500,154
Funded Ratio	98.2%	94.6%
Market Value of Assets and Additional Liabilities		
Market Value of Assets	\$ 2,264,996,000	\$ 2,238,466,000
Present Value of Projected Plan Benefits	\$ 2,810,402,462	\$ 2,743,241,413
Summary of Data		
Number of Members in Valuation		
Active Paid Members	4,570	4,557
Deferred Option Plan Members	22	30
Terminated Members with Refunds Due	668	763
Terminated Members with Deferred Benefits	125	132
Retired Members	2,602	2,480
Beneficiaries	707	699
Disabled Members	139	141
Total	8,833	8,802
Active Member Statistics		
Total Annual Compensation ⁽²⁾	\$ 293,483,501	\$ 287,105,267
Average Compensation ⁽²⁾	64,220	63,003
Average Age	39.9	39.9
Average Service	12.1	12.1

⁽¹⁾ For the fiscal years beginning July 1, 2009, the system receives 14% of the State's revenue from insurance premium taxes. For fiscal years beginning July 1, 2010, the amount of insurance premium tax apportioned to the System will be applied prior to the calculation of the Home Office Credit.

⁽²⁾ Compensation is projected one year based on the salary increase assumptions.

Highlights: Effects of Changes

Legislative Changes

There were no legislative changes with an actuarial impact since the prior valuation was completed and prior to July 1, 2015.

Changes in Assumptions and Methods

There were no changes in actuarial assumptions since the prior valuation. The economic assumptions with respect to investment yield, salary increase and inflation have been based upon a review of the existing portfolio structure as well as recent and anticipated experience. The demographic assumptions are developed through periodic experience studies. The actuarial assumptions are selected by the Board with the recommendation of the actuary. The most recent experience study considered actual System experience for the period July 1, 2007 through June 30, 2012. See Section 4.2 for a comprehensive description of the assumptions and methods used for the July 1, 2015 valuation.

Changes in Plan Provisions

There were no changes in plan provisions or system benefits with an actuarial impact since the last valuation and prior to July 1, 2015. See Section 4.3 for a description of the plan provisions used for the July 1, 2015 valuation.

Actuarial experience during the plan year

The System experienced the following gains/(losses) during the year ending June 30, 2015. These amounts are developed in Section 1.4 of this report:

	Millions
Liability Gain/(Loss)	\$ 12.8
Asset Gain/(Loss)	\$ 36.3
Total Gain/(Loss)	\$ 49.1

Oklahoma Police Deferred Option Plan (DOP)

The Oklahoma Police Deferred Option Plan (DOP) allows employees eligible for a Normal Retirement Benefit to defer the receipt of retirement benefits while continuing employment. Participation in the DOP is limited to five years. During this time, the members' contributions stop, but the employer contributes half of the regular contribution on base salary to the Police Pension and Retirement System and the other half to the members' account in the DOP. In addition, the monthly retirement benefits are paid into the members' account in the DOP. The DOP also allows members to retroactively elect to enter the DOP as of an earlier date upon termination. The monthly retirement benefits and employer contributions that would have been payable had the member elected to enter the DOP are credited to the member's account in the DOP.

The DOP accounts are credited with interest at a rate of 2% less than the total fund net earnings, with a guaranteed minimum interest rate equal to the valuation interest rate of 7.5%. The interest rate credited for the fiscal year ended June 30, 2015, was 7.5%.

Highlights: Effects of Changes (continued)

Effective July 1, 2006, a retired member who has completed participation in the DOP is allowed to transfer their account balance into a Deferred Option Payout Account and no further contributions will be accepted. The accounts are credited with interest at a rate of 2% less than the total fund net earnings if the fund returns more than 2%.

If the fund realizes negative returns, the accounts are reduced at a rate equal to the fund net earnings. Alternatively, if the fund realizes a positive return of less than 2%, the accounts are credited with a rate of zero. The interest rate for the payout accounts for the fiscal year ended June 30, 2015 was 1.38%.

The assets and liabilities reflected in these results as of July 1, 2015, include the account balances for the Deferred Option Plan, as in prior valuations. Statistics regarding the number of Deferred Option Plan members and total account balances are shown in the table below:

DOP Statistics	July 1, 2015	July 1, 2014
Number of Active DOP Members	22	30
Account Balances of Active Members	\$ 3.6M	\$ 4.2M
Deferred Option Payout Account Balances	\$ 3.6M	\$ 3.8M
Total	\$ 7.2M	\$ 8.0M

GASB 67

Information calculated in accordance with GASB Statement 67 will be provided separately for this plan in a supplement to this report.

Actuarial Certification

This valuation is based on employee and financial data which were provided by the Oklahoma Police Pension and Retirement System and the independent auditor, respectively, and which are summarized in this report.

Future actuarial measurements may differ significantly from current measurements due to plan experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in plan provisions or applicable law. An analysis of the potential range of such future differences is beyond the scope of this valuation.

Use of this report for any other purposes or by anyone other than the Oklahoma Police Pension and Retirement System and its auditors may not be appropriate and may result in mistaken conclusions because of failure to understand applicable assumptions, methods, or inapplicability of the report for that purpose. The attached pages should not be provided without a copy of this cover letter. No one may make any representations or warranties based on any statements or conclusions contained in this report without Buck Consultants' prior written consent.

We are Members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained in this report. This report has been prepared in accordance with all applicable Actuarial Standards of Practice, and we are available to answer questions about it.



David Kent, FSA, EA, MAAA
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Consultant, Retirement Actuary

Section 1: Funding Results

Section 1.1	Summary of Contribution Requirement
Section 1.2	Liability Detail
Section 1.3	Unfunded Actuarial Accrued Liability
Section 1.4	Actuarial Gain/(Loss)
Section 1.5	Contributions
Section 1.6	Ten-Year Projected Cash Flow

1.1 Summary of Contribution Requirement

	Actuarial Valuation as of			
	July 1, 2015		July 1, 2014	
	Amount	% of Active Covered Comp.	Amount	% of Active Covered Comp.
1. Annual Covered Compensation for Members Included in Valuation				
a. Active Members	\$ 293,483,501		\$ 287,105,267	
b. Deferred Option Plan Members	1,823,564		2,397,060	
c. Total	\$ 295,307,065		\$ 289,502,327	
2. Total Normal Cost Mid-year	\$ 56,609,783	19.3%	\$ 56,602,797	19.7%
3. Unfunded Actuarial Accrued Liability	\$ 39,801,426		\$ 118,500,154	
4. Amortization of Unfunded Actuarial Accrued Liability over five years ⁽⁶⁾	\$ 9,494,339	3.2 %	\$ 28,267,346	9.8 %
5. Budgeted Expenses	\$ 2,036,976	0.7%	\$ 2,006,392	0.7%
6. Total Required Contribution (2 + 4 + 5)	\$ 68,141,098	23.2%	\$ 86,876,535	30.3%
7. Estimated Employee Contribution (8% x 1a)	\$ 23,478,680	8.0%	\$ 22,968,421	8.0%
8. Estimated Municipality Contributions				
a. Active Members	\$ 38,152,855	13.0%	\$ 37,323,685	13.0%
b. Deferred Option Plan Members	118,532	6.5% ⁽¹⁾	155,809	6.5% ⁽¹⁾
c. Total	\$ 38,271,387	13.0% ⁽²⁾	\$ 37,479,494	12.9% ⁽²⁾
9. Required State Contribution to amortize Unfunded Actuarial Accrued Liability over five years. (6 - 7 - 8c)	\$ 6,391,031	2.2% ⁽²⁾	\$ 26,428,620	9.1% ⁽²⁾
10. Previous year's actual State Contribution ⁽³⁾	\$ 35,490,000	12.3% ⁽⁴⁾	\$ 31,329,000	11.2% ⁽⁴⁾
11. Approximate period over which previous year's State Contribution will amortize current Unfunded Actuarial Accrued Liability (UAAL)	2 ⁽⁵⁾		4 ⁽⁵⁾	

⁽¹⁾ Percentage of Deferred Option Plan Members' covered compensation.

⁽²⁾ Percent of total covered compensation.

⁽³⁾ For the fiscal years beginning July 1, 2009, the system receives 14% of the State's revenue from insurance premium taxes. For fiscal years beginning July 1, 2010, the amount of insurance premium tax apportioned to the System will be applied prior to the calculation of the Home Office Credit.

⁽⁴⁾ Shown as a percent of previous year's total covered compensation (\$289,502,327 for 2014 and \$279,013,522 for 2013).

⁽⁵⁾ Amortization period assumes that the State contribution will increase at 3% per year and covered compensation for Deferred Option Plan members remains a constant percentage of total covered compensation

⁽⁶⁾ Funding Policy is to amortize the Unfunded Actuarial Accrued Liability over five years, which will be reset to five years each year in the future.

1.2 Liability Detail

	July 1, 2015
Present Value of Benefits	\$ 2,810,402,462
Present Value of Future Normal Costs	\$ 541,329,036
Accrued Liability	\$ 2,269,073,426
Normal Cost Mid-Year	\$ 56,609,783

Active Accrued Liability	
a. Retirement	\$ 1,113,086,588
b. Disability	\$ (253,253)
c. Withdrawal	\$ (3,146,155)
d. Death	<u>\$ 5,981,374</u>
e. Total	\$ 1,115,668,554
Inactive Accrued Liability	
1. Members Eligible for Automatic COLA	
a. Retired Members	\$ 58,910,107
b. Disabled Members	\$ 8,509,611
c. Beneficiaries	<u>\$ 66,124,825</u>
d. Total	\$ 133,544,543
2. Members Not Eligible for Automatic COLA	
a. Retired Members	\$ 870,866,065
b. Disabled Members	\$ 15,839,302
c. Terminated Members	\$ 21,323,624
d. Deferred Option Plan Members	\$ 19,225,364
e. Beneficiaries	<u>\$ 92,605,974</u>
f. Total	\$ 1,019,860,329
3. Total Inactive (1d + 2f)	\$ 1,153,404,872
Accrued Liability (Active + Inactive)	\$ 2,269,073,426

1.3 Unfunded Actuarial Accrued Liability

The actuarial accrued liability is the present value of projected system benefits allocated to past service by the actuarial funding method being used.

	Total System	
	July 1, 2015	July 1, 2014
1. Actuarial Present Value of Benefits		
a. Active Members	\$ 1,656,997,590	\$ 1,639,213,728
b. Terminated Members	21,323,624	22,574,099
c. Members Receiving Benefits who are not eligible for Automatic COLA	979,311,341	912,362,419
d. Members Receiving Benefits who are eligible for Automatic COLA	133,544,543	145,491,126
e. Deferred Option Plan Members	19,225,364	23,600,041
f. Total	\$ 2,810,402,462	\$ 2,743,241,413
2. Actuarial Present Value of Future Normal Costs	541,329,036	538,444,259
3. Total Actuarial Accrued Liability (1f - 2)	2,269,073,426	2,204,797,154
4. Actuarial Value of Assets	2,229,272,000	2,086,297,000
5. Unfunded Actuarial Accrued Liability (3 - 4, not less than \$0)	\$ 39,801,426	\$ 118,500,154

1.4 Actuarial Gain/(Loss)

The actuarial gain/(loss) is comprised of both the liability gain/(loss) and the actuarial asset gain/(loss). Each of these represents the difference between the expected and actual values as of July 1, 2015.

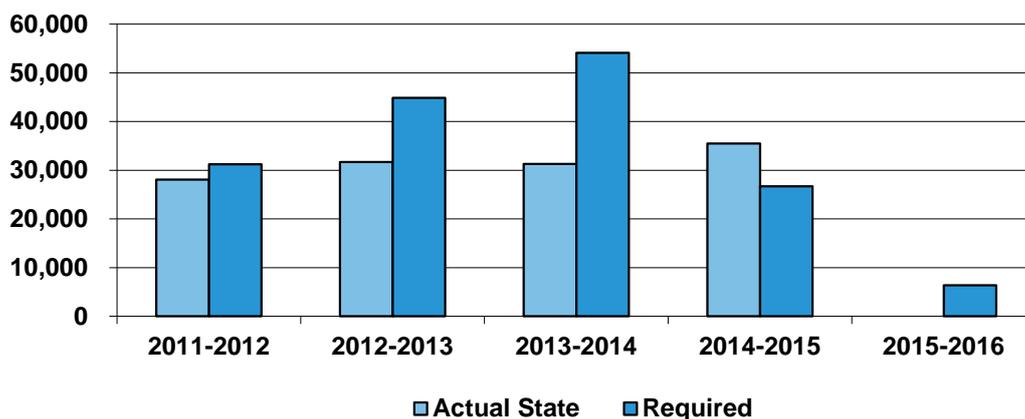
1. Expected Actuarial Accrued Liability	
a. Actuarial Accrued Liability at July 1, 2014	\$ 2,204,797,154
b. Normal Cost for Plan Year Ending June 30, 2015	54,592,585
c. Benefit Payments for Plan Year Ending June 30, 2015	141,693,000
d. Interest on a + b - c to End of Year	164,140,743
e. Expected Actuarial Accrued Liability Before Changes (a + b - c + d)	2,281,837,482
f. Change in Actuarial Accrued Liability at July 1, 2015 due to changes in Actuarial Assumptions	0
g. Change in Actuarial Accrued Liability at July 1, 2015 due to changes in System Provisions	0
h. Expected Actuarial Accrued Liability at July 1, 2015 (e + f + g)	\$2,281,837,482
2. Actuarial Accrued Liability at July 1, 2015	\$2,269,073,426
3. Actuarial Liability Gain/(Loss) (1h - 2)	\$ 12,764,056
4. Expected Actuarial Value of Assets	
a. Actuarial Value of Assets at July 1, 2014	\$2,086,297,000
b. Contributions Made for Plan Year Ending June 30, 2015	95,618,000
c. Benefit Payments and Expenses for Plan Year Ending June 30, 2015	143,642,000
d. Interest on a + b - c to End of Year	154,671,000
e. Expected Actuarial Value of Assets at July 1, 2015 (a + b - c + d)	\$2,192,944,000
5. Actuarial Value of Assets as of July 1, 2015	\$2,229,272,000
6. Actuarial Asset Gain/(Loss) (5 - 4e)	\$ 36,328,000
7. Actuarial Gain/(Loss) (3 + 6)	\$ 49,092,056

1.5 Contributions

Contributions to the Retirement System are made by the Members, municipalities, and the State of Oklahoma. Member contributions equal 8% of base salary. Municipalities contribute 13% of base salary per year for plan years after June 30, 1996.

The active Deferred Option Plan Members do not make employee contributions to the System. However, municipalities continue contributing for them, with 50% of the contribution going into the System fund and 50% going into the Deferred Option Account. Contributions for members who retroactively elect to enter the Deferred Option Plan as of an earlier date are also deposited into the Deferred Option Account.

Beginning July 1, 2004 and ending June 30, 2009, the fund received 17% of the insurance premium tax. In subsequent fiscal years, the fund has received 14% of this tax. Additionally, as of July 1, 2006, the system began receiving 26% of a special allocation established to refund the System for reduced allocations of insurance premium taxes resulting from increases in insurance premium tax credits. Beginning in fiscal year that commenced July 1, 2010, the amount of tax apportioned is applied prior to the calculation of the Home Office Credit.



As of July 1, 2014, the amortization period was changed to an open 5-year period.

1.6 Ten-Year Projected Cash Flow

(Retirement Benefit Payments)

Plan Year Ending	Actives	Retirees ⁽¹⁾	Total
6/30/2016	\$ 92,599,116	\$ 114,080,715	\$ 206,679,831
6/30/2017	\$ 41,063,707	\$ 103,866,318	\$ 144,930,025
6/30/2018	\$ 52,341,095	\$ 103,072,255	\$ 155,413,350
6/30/2019	\$ 57,853,348	\$ 102,176,549	\$ 160,029,897
6/30/2020	\$ 74,435,686	\$ 101,130,352	\$ 175,566,038
6/30/2021	\$ 77,648,802	\$ 100,001,998	\$ 177,650,800
6/30/2022	\$ 79,005,587	\$ 98,856,791	\$ 177,862,378
6/30/2023	\$ 89,292,869	\$ 97,503,667	\$ 186,796,536
6/30/2024	\$ 88,929,008	\$ 96,017,899	\$ 184,946,907
6/30/2025	\$ 98,830,790	\$ 94,504,832	\$ 193,335,622

⁽¹⁾ Includes DOP Members, Disabled Members, Beneficiaries and Terminated Members.

Section 2: Accounting Results

Section 2.1

ASC 960 Information

2.1 ASC 960 Information

A. Actuarial Present Value of Accumulated System Benefits

The actuarial present value of vested and non-vested accumulated system benefits was computed on an ongoing system basis in order to provide required information under FASB Accounting Standards Codification (ASC) 960. In this calculation, a determination is made of all benefits earned by current Members as of the valuation date; the actuarial present value is then computed using demographic assumptions and an assumed interest rate. Assumptions regarding future salary and accrual of future benefit service are not necessary for this purpose.

Please note that ASC 960 is no longer applicable for public plans; however, we have provided results on that basis in order to facilitate comparison with earlier years.

Accumulated System Benefits	July 1, 2015	July 1, 2014
Vested Benefits		
a. Active Members	\$ 790,087,607	\$ 814,329,649
b. Deferred Option Plan Members	\$ 19,225,364	\$ 23,600,041
c. Terminated Members	\$ 21,323,624	\$ 22,574,099
d. Members Receiving Benefits	\$ <u>1,112,855,884</u>	\$ <u>1,057,853,545</u>
e. Total Vested Benefits	\$ 1,943,492,479	\$ 1,918,357,334
Non-vested Benefits	\$ <u>152,191,587</u>	\$ <u>117,802,584</u>
Total Accumulated System Benefits	\$ 2,095,684,066	\$ 2,036,159,918
Assumed Rate of Interest	7.5%	7.5%
Market Value of Assets Available for Benefits	\$ 2,264,996,000	\$ 2,238,466,000
Funded Ratio	108.1%	109.9%

Number of Members	July 1, 2015	July 1, 2014
Vested Members		
a. Active Members	2,362	2,213
b. Deferred Option Plan Members	22	30
c. Members with Deferred Benefits	125	132
d. Members Receiving Benefits	<u>3,448</u>	<u>3,320</u>
e. Total Vested Members	5,957	5,695
Non-vested Members	<u>2,876</u>	<u>3,107</u>
Total Members	8,833	8,802

Section 3: System Assets

This section presents information regarding System assets as reported by the auditor. The System assets represent the portion of total System liabilities that has been funded as of the valuation date.

Section 3.1	Summary of Assets
Section 3.2	Reconciliation of Assets
Section 3.3	Actuarial Value of Assets
Section 3.4	Average Annual Rates of Investment Return

3.1 Summary of Assets

Asset Category	Market Value as of June 30, 2015	Market Value as of June 30, 2014
1. Cash and Short-term Investments	\$ 48,062,000	\$ 30,240,000
2. Receivables		
a. Interest and Dividends	\$ 3,030,000	\$ 3,489,000
b. Member Contributions	904,000	683,000
c. Employer Contributions	1,478,000	1,116,000
d. Insurance Premium Tax	7,684,000	6,563,000
e. Investments Sold	1,334,000	346,000
f. Other Receivables	<u>0</u>	<u>0</u>
g. Total	\$ 14,430,000	\$ 12,197,000
3. Investments at Fair Value		
a. Domestic Government Bonds	\$ 22,177,000	\$ 33,398,000
b. International Government Bonds	0	0
c. Corporate Bonds ⁽¹⁾	348,873,000	367,593,000
d. Domestic Stock	543,980,000	659,596,000
e. International Stock	322,805,000	300,499,000
f. Other	970,046,000	837,645,000
g. Securities Lending Short-Term Pool	<u>0</u>	<u>9,315,000</u>
h. Total	\$ 2,207,881,000	\$ 2,208,046,000
4. Assets used in System Operations		
a. Furniture, Fixtures and Equipment	\$ 101,000	\$ 304,000
5. Total Assets	\$ 2,270,474,000	\$ 2,250,787,000
6. Liabilities		
a. Payable for Investments Purchased	\$ 860,000	\$ 922,000
b. Accounts Payable and Accrued Expenses	856,000	962,000
c. DOP Benefits Due and Currently Payable	3,762,000	1,122,000
c. Securities Lending Collateral Payable	<u>0</u>	<u>9,315,000</u>
d. Total Liabilities	\$ 5,478,000	\$ 12,321,000
7. Net Assets for Pension Benefits	\$ 2,264,996,000	\$ 2,238,466,000

(1) Includes Domestic and International Bonds

3.2 Reconciliation of Assets

Transactions	June 30, 2015	June 30, 2014
Additions		
1. Contributions		
a. Contributions from Employers	\$ 37,261,000	\$ 35,547,000
b. Contributions from System Members	22,867,000	22,131,000
c. Insurance Premium Tax	<u>35,490,000</u>	<u>31,329,000</u>
d. Total	95,618,000	89,007,000
2. Net Investment Income		
a. Interest	\$ 7,612,000	\$ 8,155,000
b. Dividends	14,030,000	11,876,000
c. Realized Gain and Unrealized Appreciation	65,594,000	286,638,000
d. Income from Securities Lending	52,000	99,000
e. Other	<u>578,000</u>	<u>513,000</u>
f. Total	\$ 87,866,000	\$ 307,281,000
g. Investment Expense	<u>(13,312,000)</u>	<u>(12,384,000)</u>
h. Net Investment Income	\$ 74,554,000	\$ 294,897,000
3. Total Additions	\$ 170,172,000	\$ 383,904,000
Deductions		
4. Retirement Benefits	\$ (139,658,000)	\$ (117,482,000)
5. Refund of Contributions	(2,035,000)	(1,759,000)
6. Administrative Expenses	(1,949,000)	(1,862,000)
7. Total Deductions	(143,642,000)	(121,103,000)
8. Net Increase	26,530,000	262,801,000
9. Net Assets Held in Trust for Pension Benefits		
a. Beginning of Year	\$ 2,238,466,000	\$ 1,975,665,000
b. End of Year	\$ 2,264,996,000	\$ 2,238,466,000
Reconciliation of Actuarial Asset Value and Market Value		
Actuarial Asset Value	\$ 2,229,272,000	\$ 2,086,297,000
Deferred Gain/(Loss)	\$ 35,724,000	\$ 152,169,000
Impact of Market Value Corridor	\$ 0	\$ 0
Market Value	\$ 2,264,996,000	\$ 2,238,466,000

3.3 Actuarial Value of Assets

Schedule of Assets Gains/(Losses)				
Year	Original Amount	Recognized in Prior Years	Recognized This Year	Recognized in Future Years
2010/2011	151,837,000	121,470,000	30,367,000	0
2011/2012	(127,013,000)	(76,208,000)	(25,403,000)	(25,402,000)
2012/2013	84,702,000	33,881,000	16,940,000	33,881,000
2013/2014	152,233,000	30,447,000	30,447,000	91,339,000
2014/2015	(80,117,000)	0	(16,023,000)	(64,094,000)
Total	181,642,000	109,590,000	36,328,000	35,724,000

Development of Actuarial Value of Assets	
1. Actuarial Value as of July 1, 2014	\$ 2,086,297,000
2. Contributions	
a. Member	22,867,000
b. Employer	37,261,000
c. Insurance tax	<u>35,490,000</u>
d. Total (a + b + c)	\$ 95,618,000
3. Decreases During the Year	
a. Benefit Payments	\$ 139,658,000
b. Return of Member Contributions	2,035,000
c. Non-investment Expenses	<u>1,949,000</u>
d. Total (a + b + c)	\$ 143,642,000
4. Expected Return at 7.5% on:	
a. Item 1	\$ 156,472,000
b. Item 2 (one-half year)	3,586,000
c. Item 3 (one-half year)	<u>5,387,000</u>
d. Total (a + b - c)	\$ 154,671,000
5. Expected Actuarial Value of Assets June 30, 2015 (1 + 2 - 3 + 4)	\$ 2,192,944,000
6. Unrecognized Asset Gain/(Loss) as of June 30, 2014	\$ 152,169,000
7. Expected Actuarial Value June 30, 2015 plus previous year's Unrecognized Asset Gain (5 + 6)	\$ 2,345,113,000
8. Market Value as of June 30, 2015	\$ 2,264,996,000
9. 2014/2015 Asset Gain/(Loss) (8 - 7)	\$ (80,117,000)
10. Asset Gain/(Loss) to be Recognized as of June 30, 2015	\$ 36,328,000
11. Initial Actuarial Value July 1, 2015 (5 + 10)	\$ 2,229,272,000
12. Constraining Values:	
a. 80% of Market Value (8 x 0.8)	\$ 1,811,997,000
b. 120% of Market Value (8 x 1.2)	\$ 2,717,995,000
13. Actuarial Value July 1, 2015 (11), but no less than (12a), nor greater than (12b)	\$ 2,229,272,000

3.4 Average Annual Rates of Investment Return

Year Ending June 30	Actuarial Value		Market Value	
	Annual	Cumulative	Annual	Cumulative
1990	8.6%	8.6%	9.2%	9.2%
1991	7.9%	8.2%	8.1%	8.6%
1992	8.7%	8.4%	13.8%	10.3%
1993	10.3%	8.9%	15.1%	11.5%
1994	9.3%	9.0%	0.0%	9.1%
1995	11.0%	9.3%	17.7%	10.5%
1996	11.9%	9.7%	13.5%	10.9%
1997	12.8%	10.1%	17.3%	11.7%
1998	13.5%	10.4%	16.9%	12.3%
1999	14.3%	10.8%	9.7%	12.0%
2000	12.8%	11.0%	8.7%	11.7%
2001	8.8%	10.8%	(5.3%)	10.2%
2002	4.9%	10.3%	(5.6%)	8.9%
2003	2.7%	9.8%	3.5%	8.5%
2004	3.3%	9.3%	15.0%	8.9%
2005	3.0%	8.9%	8.7%	8.9%
2006	6.1%	8.8%	11.0%	9.0%
2007	10.6%	8.9%	17.3%	9.5%
2008	8.9%	8.9%	(2.4%)	8.8%
2009	(0.9%)	8.3%	(16.4%)	7.4%
2010	4.4%	8.2%	11.7%	7.6%
2011	5.6%	8.0%	18.3%	8.0%
2012	2.6%	7.8%	0.5%	7.7%
2013	5.4%	7.7%	12.5%	7.9%
2014	11.4%	7.8%	15.0%	8.2%
2015	9.3%	7.9%	3.4%	8.0%

Annual Returns before 1998 exclude DOP assets.

Section 4: Basis of Valuation

This section presents and describes the basis of the valuation. The census of Members, the actuarial basis and the benefit provisions of the System are the foundation of the valuation, since these determine the projections of benefit payments and the values thereof. The valuation is based on the premise that the System will continue in existence, although no assumption is made as to future new members.

Section 4.1	System Members
Section 4.2	Actuarial Basis
Section 4.3	Summary of Plan Provisions

4.1 System Members

A. Member Data Reconciliation

	Active Members		Inactive Members					Total
	Regular	Deferred Option Plan	Refund Due to Member	Deferred Vested Members	Retired Members	Disabled Members	Beneficiaries	
As of July 1, 2014	4,557	30	763	132	2,480	141	699	8,802
Deferred Option Plan Retirees	(1)	1	0	0	0	0	0	0
Age Retirements	(137)	(9)	0	(9)	155	0	0	0
Disability Retirements	(5)	0	0	0	0	5	0	0
Deaths Without Beneficiaries	0	0	(2)	(2)	(9)	(5)	(32)	(50)
Deaths With Beneficiaries	(3)	0	0	(2)	(24)	(2)	31	0
Vested Terminations	(27)	0	0	27	0	0	0	0
Rehires	15	0	(11)	(4)	0	0	0	0
Expiration of Benefits	0	0	0	0	0	0	(1)	(1)
Termination Without Refund	(80)	0	80	0	0	0	0	0
Terminations Electing a Refund	(99)	0	(192)	(18)	0	0	0	(309)
Alternate Payee of a Qualified Domestic Relations Order	0	0	0	0	0	0	7	7
Data Corrections	17	0	(3)	1	0	0	3	18
Transfers Out	0	0	0	0	0	0	0	0
Transfers In	0	0	0	0	0	0	0	0
Net Change	(320)	(8)	(128)	(7)	122	(2)	8	(335)
New Entrants During the Year	333	0	33	0	0	0	0	366
As of July 1, 2015	4,570	22	668	125	2,602	139	707	8,833

4.1 System Members (continued)

B. Count of Active Members

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 20										0
20-24	127									127
25-29	521	64								585
30-34	365	329	56							750
35-39	181	233	270	63						747
40-44	102	125	215	366	52					860
45-49	58	70	79	199	240	62				708
50-54	1	29	37	73	137	187	45			509
55-59		2	4	37	42	50	87	6		228
60-64				7	14	6	9	10	1	47
65-69		1	1	1	3		2		1	9
70-74										0
75+										0
Total	1,355	853	662	746	488	305	143	16	2	4,570

C. Average Compensation

Age	Years of Service									Total
	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	
Under 20										0
20-24	40,976									40,976
25-29	46,693	53,248								47,410
30-34	46,258	60,422	70,530							54,284
35-39	44,184	58,801	70,176	81,147						61,255
40-44	43,485	55,044	67,337	77,475	85,014					68,105
45-49	40,855	52,130	65,658	72,728	85,304	87,647				72,861
50-54	39,359	57,561	66,208	68,606	82,194	86,946	87,999			79,854
55-59		59,902	61,726	68,042	70,104	82,348	82,896	98,910		82,963
60-64				69,149	61,943	77,157	87,867	100,184	100,297	78,875
65-69		32,988	72,190	43,961	87,393		73,793		90,922	72,203
70-74										0
75+										0
Total	45,208	57,842	68,475	75,060	83,037	86,142	90,771	99,706	95,610	64,220

Average compensation not shown for groupings of less than twenty members

4.1 System Members (continued)

D. Members in Pay Status - Annual Benefits

Attained Age	Retired Members		Beneficiaries		Disabled Members		Current Payment Total	
	No.	Benefit	No.	Benefit	No.	Benefit	No.	Benefit
Under 50	110	3,768,474	54	879,594	26	351,763	190	4,999,831
50-54	287	9,007,139	4	556,403	16	189,853	344	9,753,395
55-59	435	13,395,537	64	1,251,416	20	236,568	519	14,883,521
60-64	554	17,522,000	97	2,112,663	22	288,355	673	19,923,018
65-69	544	17,270,955	103	2,670,267	18	259,946	665	20,201,168
70-74	328	9,833,605	89	2,687,178	15	316,567	432	12,837,350
75-79	199	6,318,556	100	3,282,242	11	312,253	310	9,913,051
80-84	94	3,281,230	64	2,268,552	4	125,695	162	5,675,477
85-89	39	1,429,828	62	2,177,927	7	229,817	108	3,837,572
90+	12	386,435	33	1,102,744	0	0	45	1,489,179
Total	2,602	82,213,759	707	18,988,986	139	2,310,817	3,448	103,513,562

4.1 System Members (continued)

E. Terminated Vested and Deferred Option Plan Members - Annual Benefits

Attained Age	Terminated Vested Members		Deferred Option Plan Members	
	No.	Benefit	No.	Benefit
Under 40	34	\$ 508,651	0	\$ 0
40-44	33	578,354	1	50,355
45-49	31	590,314	3	130,046
50-54	15	260,821	7	306,793
55-59	8	192,288	7	319,392
60-64	3	52,597	4	149,597
65+	1	49,363	0	0
Total	125	\$ 2,232,388	22	\$ 956,183

4.1 System Members (continued)

F. Member Statistics

Inactive Members as of July 1, 2015	Number	Amount of Annual Benefit
Members Receiving Benefits		
a. Retired	2,602	\$ 82,213,759
b. Beneficiaries	707	18,988,986
c. Disabled	<u>139</u>	<u>2,310,817</u>
Total	3,448	\$ 103,513,562
Terminated Vested	125	\$ 2,232,388
Deferred Option Plan Members	22	\$ 956,183
Terminated Members with Refunds Due	668	N/A

Statistics for Active Members	Number	Average		
		Age	Service	Earnings
As of July 1, 2014				
a. Continuing	4,168	40.9	13.2	\$ 65,185
b. New	<u>389</u>	<u>30.0</u>	<u>0.6</u>	<u>36,621</u>
Total	4,557	39.9	12.1	\$ 63,003
As of July 1, 2015				
a. Continuing	4,205	40.8	13.1	\$ 66,390
b. New	<u>365</u>	<u>30.1</u>	<u>0.7</u>	<u>39,221</u>
Total	4,570	39.9	12.1	\$ 64,220

4.2 Actuarial Basis

A. Entry Age Actuarial Cost Method

The actuarial cost method is selected by the Board with the recommendation of the actuary. Liabilities and contributions shown in this report are computed using the Individual Entry Age method of funding. The System has used this cost method since at least 1990.

Sometimes called “funding methods”, actuarial cost methods are techniques used by actuaries to establish the amount and incidence of the annual actuarial cost of pension plan benefits, or normal cost, and the related unfunded actuarial accrued liability. Ordinarily the annual contribution to the system is comprised of (1) the normal cost and (2) an amortization payment on the unfunded actuarial accrued liability.

Under the Entry Age Actuarial Cost Method, the Normal Cost is computed as the level percentage of pay which, if paid from the earliest time each Member would have been eligible to join the system if it then existed (thus, entry age) until his retirement or termination, would accumulate with interest at the rate assumed in the valuation to a fund sufficient to pay all benefits under the system.

The **Actuarial Accrued Liability** under this method at any point in time is the theoretical amount of the fund that would have accumulated had annual contributions equal to the normal cost been made in prior years (it does not represent the liability for benefits accrued to the valuation date.) The **Unfunded Actuarial Accrued Liability** is the excess of the actuarial accrued liability over the actuarial value of system assets on the valuation date.

Under this method experience gains or losses, i.e. decreases or increases in accrued liabilities attributable to deviations in experience from the actuarial assumptions, adjust the unfunded actuarial accrued liability.

B. Asset Valuation Method

The asset valuation method is selected by the Board with the recommendation of the actuary. The actuarial value of assets is based on a five-year moving average of expected and market values determined as follows:

- at the beginning of each plan year, a preliminary expected actuarial asset value is calculated as the sum of the previous year’s actuarial value increased with a year’s interest at the System valuation rate plus net cash flow adjusted for interest (at the same rate) to the end of the previous plan year;
- the expected actuarial asset value is set equal to the preliminary expected actuarial value plus the unrecognized investment gains and losses as of the beginning of the previous plan year;
- the difference between the expected actuarial asset value and the market value is the investment gain or loss for the previous plan year; the (final) actuarial asset value is the preliminary value plus 20% of the investment gains and losses for each of the five previous plan years, but in no case more than 120% of the market value or less than 80% of the market value.

4.2 Actuarial Basis

B. Asset Valuation Method (continued)

- Deferred Option Plan assets are included in the actuarial value. For all periods following July 1, 2007, the Deferred Option Plan assets are subject to the same smoothing method stated above. Prior to July 1, 2007, they were included at market value but were not subject to the smoothing described above.

Besides the changes to the smoothing of Deferred Option Plan assets, the System has used this method since at least 1998.

C. Valuation Procedures

No actuarial accrued liability is held for non-vested, inactive Members who have a break in service, or for non-vested Members who have quit or been terminated, even if a break in service had not occurred as of the valuation date. The actuarial accrued liability does include a liability for non-vested terminations that have not taken a refund of their accumulated contribution balance.

The wages used in the projection of benefits and liabilities are based upon the prior year's actual earnings increased by the salary scale.

In computing accrued benefits, average earnings were determined using actual pay history.

No benefits are projected to be greater than the compensation limitation and dollar limitation required by the Internal Revenue Code Section 401 and 415 for governmental plans.

The calculations for the required state contribution are determined as of mid-year. This is a reasonable assumption since the employer contributions, employee contributions and State insurance premium tax allocations are made on a monthly basis throughout the year, and mid-year represents an average weighting of the contributions.

The contribution requirements are based on total annual compensation rather than total covered compensation of employees under assumed retirement age. This is a better reflection of the overall expectations for the System.

The Entry Age Normal Funding Method has been adjusted for those members granted prior service. The prior service is treated as occurring immediately before the membership date. Level pay is assumed during this period before actual membership. Entry Age costs are determined as if the member entered the System on the date the prior service is assumed to have begun. This treatment reflects the extra cost of prior service immediately in the accrued liability and preserves the relationship of normal cost to a year of service accrual.

D. Actuarial Assumptions

The actuarial assumptions are selected by the Board with the recommendation of the actuary. The most recent experience study considered actual System experience for the period July 1, 2007 through June 30, 2012.

4.2 Actuarial Basis

D. Actuarial Assumptions (continued)

Economic Assumptions

1. Investment Return 7.5%, net of investment expenses, per annum, compound annually. The System has used this assumption since at least 1984.

2. Earnings Progression Sample rates below:

Years of Service	Inflation %	Merit %	Increase %
0	3.0	14.00	17.00
1	3.0	10.00	13.00
2	3.0	6.30	9.30
3	3.0	5.90	8.90
4	3.0	5.50	8.50
5	3.0	5.10	8.10
6	3.0	4.70	7.70
7	3.0	4.30	7.30
8	3.0	3.90	6.90
9	3.0	3.50	6.50
10	3.0	3.15	6.15
15	3.0	1.70	4.70
20	3.0	1.50	4.50

Demographic Assumptions

1. Retirement Rates See table below:

Years of Service	Annual Rates of Retirement Per 100 Eligible Members
20	20
21	6
22	6
23	6
24	10
25	20
26	10
27	10
28	10
29	15
30	100

4.2 Actuarial Basis

D. Actuarial Assumptions (continued)

2. Mortality Rates

- (a) Active employees (pre-retirement) RP-2000 Blue Collar Healthy Combined (Fully generational using Scale AA) with age set back four years
- (b) Active employees (post-retirement and nondisabled pensioners) RP-2000 Blue Collar Healthy Combined (Fully generational using Scale AA)
- (c) Disabled pensioners RP-2000 Blue Collar Healthy Combined with age set forward 4 years

3. Disability Rates

Graduated rates. See table below:

Age Range	Annual Rate
20-24	.0002
25-29	.0002
30-34	.0004
35-39	.0006
40-44	.0008
45-49	.0010
50-54	.0012
55-59	.0014

4. Withdrawal Rates

Graduated rates by years of service. See table below:

Service Range	Annual Rate
0	.200
1	.130
2	.080
3	.060
4	.060
5-10	.040
11-15	.015
16-20	.010
Over 20	.000

5. Marital Status

- (a) Percentage married: 85% of participants are assumed to be married.
- (b) Age difference: Males are assumed to be three (3) years older than females.

4.2 Actuarial Basis

D. Actuarial Assumptions (continued)

Other Assumptions

1. Assumed Age of Commencement for Deferred Benefits: Age 50, or the date at which the participant would have achieved twenty years of service, if later.
2. Provision for Expenses: Administrative Expenses, as budgeted by the Oklahoma Police Pension and Retirement System.
3. Percentage of Disability: Members becoming disabled have a 25%-49% impairment.
4. Duty-Related Death: All active pre-retirement deaths are duty-related.
5. Cost-of-Living Allowance: Police officers eligible to receive increased benefits according to repealed Section 50-120 of Title 11 of the Oklahoma Statutes pursuant to a court order receive an adjustment of 1/3 to 1/2 of the increase or decrease of any adjustment to the base salary of a regular police officer, based on an increase in base salary of 3%.
6. Deferred Option Plan: Members currently participating in the Deferred Option Plan (DOP) are assumed to remain in the DOP for the maximum of five years. Active members leaving active service are assumed to retroactively elect to join the DOP for the maximum allowable period. DOP account balances are assumed to accumulate at 7.75% (to reflect the interest rate guarantee prior to retirement) and members are assumed to elect a lump sum at retirement. All balances held in Deferred Option Payout Accounts are assumed to be paid immediately.

4.3 Summary of System Provisions

Effective Date and Plan Year:	The System became effective January 1, 1981 and has been amended each year since then. The plan year is July 1 to June 30.
Administration:	The System is administered by the Oklahoma Police Pension and Retirement Board consisting of thirteen Members. The Board shall be responsible for the policies and rules for the general administration of the System.
Type of Plan:	A defined benefit plan.
Employers Included:	An eligible employer may join the System on the first day of any month. An application of affiliation must be filed in the form of a resolution before the eligible municipality can become a participating municipality.
Eligibility:	All persons employed full-time as officers working more than 25 hours per week or any person undergoing police training to become a permanent police officer with a police department of a participating municipality, with ages not less than twenty-one (21) nor more than forty-five (45) when accepted for membership.
Service Considered:	Credited service consists of the period during which the Member participated in the System or predecessor municipal plan as an active employee, plus any service prior to the establishment of the municipal plan which was credited under the predecessor municipal systems or credited service granted by the State Board, plus any applicable military service.
Salary Considered:	<p>Base salary used in the determination of benefits does not include payment for accumulated sick and annual leave upon termination of employment or any uniform allowances.</p> <p>Final average salary means the average paid base salary for normally scheduled hours of an officer over the highest 30 consecutive months of the last 60 months of credited service.</p>

4.3 Summary of System Provisions (continued)

State Contributions:	Insurance premium tax allocation. Historically, the System has received 14% of these collected taxes. For the fiscal years beginning July 1, 2004 and ending June 30, 2009, the System received 17% of these collected taxes. For the fiscal year beginning July 1, 2009 and each fiscal year thereafter, the System received 14% of these collected taxes. Beginning in fiscal year July 1, 2006, the System began receiving 26% of a special allocation established to refund the System for reduced allocations of insurance premium taxes resulting from increases in insurance premium tax credits. Beginning in fiscal year July 1, 2010, the amount of insurance premium tax apportioned to the System will be applied prior to the calculation of the Home Office Credit.
Municipality Contributions:	Contribution is thirteen (13%) percent as of July 1, 1996.
Member Contributions:	Eight (8%) percent of base salary. These contributions shall be “picked up” after December 31, 1988 pursuant to Section 414(h)(2) of the Internal Revenue Code.
Normal Retirement Benefit:	
Eligibility:	20 years of credited service.
Benefit:	2 1/2% of the final average salary multiplied by the years of credited service, with a maximum of 30 years of credited service considered.
Form of Benefit:	The normal form of benefit is a Joint and 100% Survivor Annuity if the Member has been married 30 months prior to death.
Cost-of-Living Adjustments:	Police officers eligible to receive increased benefits according to repealed Section 50-120 of Title 11 of the Oklahoma Statutes pursuant to a court order shall receive an adjustment of 1/3 to 1/2 of the increase or decrease of any adjustment to the base salary of a regular police officer.

4.3 Summary of System Provisions (continued)

Termination:

Less Than 10 Years of Service: A refund of contributions without interest.

More than 10 Years of Service: If greater than 10 years of service, but not eligible for the Normal Retirement Benefit, the benefit is payable at the later of the date the Member would have had 20 years of service or attained age 50 in an amount equal to 2 1/2% of the final average salary multiplied by the years of credited service. The Member may elect a refund of contributions instead of the retirement benefit.

Disability Benefit (Duty): Total Disability

Upon determination of total disability incurred as a result of the performance of duty, the normal disability benefit is 50% of final average salary.

Partial Disability

Upon determination of partial disability incurred as a result of the performance of duty, the normal disability is reduced according to the percentage of impairment, as outlined in the "American Medical Association's Guide to the Evaluation of Permanent Impairment." The following shows the percent of normal disability benefit payable as related to the percent of impairment.

% Impairment	% of Benefit
1% to 49%	50%
50% to 74%	75%
75% to 100%	100%

Disability Benefit (Non-Duty): Upon determination of disability after 10 years of service due to causes other than duty, the benefit equals the accrued benefit of 2 1/2% of final average salary times years of credited service (maximum of 30 years) times:

- 100%, if permanent and total, or
- the following percentages, if partial disability.

1% to 24%	25%
25% to 49%	50%
50% to 74%	75%
75% to 99%	90%

4.3 Summary of System Provisions (continued)

Death Benefits Payable to Beneficiaries:

Prior to Retirement (Duty):	The greater of: 1) 2 1/2% of final average salary times years of credited service (maximum of 30 years), or 2) 50% of final average salary.
Prior to Retirement (Non-Duty):	After 10 years of service, a benefit equal to 2 1/2% of final average salary times years of credited service (maximum of 30 years). Prior to 10 years of service, a refund of the accumulated contributions made by the Member will be paid to the estate.
After Retirement:	100% of the Member's retirement or deferred vested benefit, payable when the Member would have been eligible to receive it, payable to the beneficiary.
Death Benefit:	The beneficiary shall receive a death benefit amount of \$5,000.
Beneficiary:	Surviving spouses must be married to the member for 30 continuous months prior to the date of death (waived in the case of duty related death). If the beneficiary is a child, the benefits are payable to age 18, or 22 if a full-time student.

4.3 Summary of System Provisions (continued)

Deferred Option Plan:

A Member who has 20 or more years of service and continues employment may elect to participate in the Deferred Option Plan (DOP). Participation in the DOP shall not exceed five years. The employees' contributions cease upon entering the Plan, but the employer contributions are divided equally between the System and the DOP. The monthly retirement benefits that the employee is eligible to receive are paid into the DOP account.

A member is also allowed to retroactively elect to join the DOP as of a back-drop-date which is no earlier than the member's normal retirement date or five years before his termination date. The monthly retirement benefits and employee contributions that would have been payable had the member elected to join the DOP are credited to the member's DOP account with interest.

The retirement benefits are not recalculated for service and salary past the election date to join the DOP. However, the benefits may be increased by any applicable cost-of-living increases.

When the Member actually retires from active service, the DOP account balance may be paid in a lump sum, to an annuity provider, or transferred to a Deferred Option Payout Account. Monthly retirement benefits are then paid directly to the retired Member.

The original Plan became effective during the July 1, 1990 to June 30, 1991 Plan Year with the back-drop and Payout Account provisions added subsequently. The DOP account of an active member is guaranteed a minimum of the valuation interest rate for investment return, or 2% less than the fund rate of return, if greater. If the balance is transferred to a Payout Account upon retirement, the account is credited with interest at a rate of 2% below the total fund net earnings if the fund returns more than 2%. If the fund realizes negative returns, the account is reduced at a rate equal to the fund net earnings. Alternatively, if the fund realizes a positive return of less than 2%, the account is credited with a rate of zero.