



October 11, 2018

Board of Trustees  
Teachers' Retirement System of Oklahoma  
Oliver Hodge Education Building  
2500 N. Lincoln Boulevard, 5th Floor  
Oklahoma City, Oklahoma 73105

**Subject: GASB 67 and 68 Reporting and Disclosure Information for OTRS Fiscal Year Ending June 30, 2018**

Dear Members of the Board:

This report provides information required by the Teachers' Retirement System of Oklahoma (OTRS) in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67, "Financial Reporting for Pension Plans." Additionally, this report provides information required by the governmental employers participating in OTRS in connection with the GASB Statement No. 68, "Accounting and Financial Reporting for Pensions." This information can be used by governmental employers in financial reporting for fiscal years ending between (and including) June 30, 2018 and June 30, 2019. The information provided herein was prepared for the purpose of assisting OTRS and the governmental employers in the compliance with the financial reporting and disclosure requirements of GASB Statement Nos. 67 and 68.

Beginning with the fiscal year ended 2017, the plan liabilities associated with the Supplemental Medical Insurance benefit and the assets assigned to the Retiree Medical Benefit Fund, which constitute the OTRS OPEB Plan, were excluded from this report. The OTRS OPEB Plan is covered in the report prepared for reporting under GASB Statement No. 74.

The net pension liability is not an appropriate measure for measuring the sufficiency of plan assets to cover the estimated cost of settling the employer's benefit obligation. The net pension liability is not an appropriate measure for assessing the need for or amount of future employer contributions. A calculation of the plan's liability for purposes other than satisfying the requirements of GASB Statement Nos. 67 and 68 may produce significantly different results. This report may be provided to parties other than OTRS only in its entirety and only with the permission of OTRS.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of June 30, 2018. It is our opinion that the recommended assumptions are internally consistent, reasonable, and comply with the requirements under GASB Statement Nos. 67 and 68.

This report is based upon information, furnished to us by OTRS, which includes benefit provisions, membership information, and financial data. We did not audit this data and information, but we did

apply a number of tests and concluded that it was reasonable and consistent. GRS is not responsible for the accuracy or completeness of the information provided to us by OTRS.

Certain tables included in the Required Supplementary Information should include a 10-year history of information. As provided for in GASB Statement Nos. 67 and 68, this historical information is only presented for the years in which the information was measured in conformity with the requirements of GASB Statement Nos. 67 and 68. The historical information in this report will begin with the information presented for the OTRS fiscal year ending June 30, 2014.

Paragraph 57 of GASB Statement No. 68 indicates that contributions to the pension plan subsequent to the measurement date of the Net Pension Liability and prior to the end of the employer's reporting period can be reported by the employer as a deferred outflow of resources related to pensions. The information contained in this report does not incorporate any contributions made to OTRS attributable to periods after June 30, 2018.

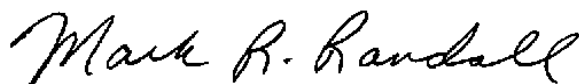
This report complements the actuarial valuation report as of June 30, 2018, provided for plan funding purposes, which was also provided to OTRS and should be considered together as a complete report for the plan year ending June 30, 2018. Please see the actuarial valuation report as of June 30, 2018 for additional discussion of the actuarial valuation, including the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

To the best of our knowledge, this report is complete and accurate and is in accordance with generally recognized actuarial practices and methods. Mr. Falls and Mr. Randall are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein.

Respectfully submitted,  
**Gabriel, Roeder, Smith & Company**



R. Ryan Falls, FSA, MAAA, EA  
Senior Consultant



Mark R. Randall, FCA, EA, MAAA  
Chief Executive Officer

## Summary of Population Statistics

The total pension liability described in this report is based on the plan membership as of June 30, 2018:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	63,796
Inactive Plan Members Entitled to But Not Yet Receiving Benefits*	25,558
Active Plan Members	<u>88,534</u>
Total Plan Members	177,888

\* Includes 13,315 nonvested terminated members entitled to a refund of their member contributions.

## Measurement of the Net Pension Liability

The net pension liability is measured as the total pension liability, less the amount of the plan's fiduciary net position. In actuarial terms, this is analogous to the accrued liability as measured using the individual entry age normal actuarial cost method less the market value of assets (not the smoothed actuarial value of assets seen in our actuarial valuations based on the Board's adopted assumptions and methods).

A single discount rate of 7.50% was used to measure the total pension liability as of both June 30, 2017 and June 30, 2018. These single discount rates were based on the expected rate of return on pension plan investments of 7.50% for the plan years ending June 30, 2017 and June 30, 2018. Based on the stated assumptions and the projection of cash flows, the pension plan's fiduciary net position and future contributions were projected to be available to finance all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

The projection of cash flows used to determine this single discount rate assumed that plan member and employer contributions will be made at the current statutory levels and remain a level percentage of payroll. The projection of cash flows also assumed that the State's contribution plus the matching contributions will remain a constant percent of projected member payroll based on the past five years of actual contributions.

## Actuarially Determined Contribution

Beginning with the fiscal year ending June 30, 2016, the Actuarially Determined Employer Contribution (ADEC) is determined as the employer contribution amount necessary to discharge the Unfunded Actuarial Accrued Liability over a period equal to the funding period for the current actuarial valuation for plan funding purposes (i.e., 17 years as of June 30, 2017). However, in no event shall the amortization period be in excess of a fixed period of twenty (20) years.

## Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption

The following table provides the sensitivity of the net pension liability to changes in the discount rate as of June 30, 2018. In particular, the table presents the plan's net pension liability, if it were calculated using a single discount rate that is one-percentage-point lower or one-percentage-point higher than the single discount rate:

	1% Decrease	Current Single Rate	1% Increase
	6.50%	Assumption	8.50%
	7.50%		
\$	8,604,702,854	\$ 6,051,383,202	\$ 3,913,823,602

## Methodology for Proportionate Shares

This report provides the Collective Pension Amounts under GASB Statement No. 68 which will be allocated to the governmental employers participating in OTRS. We are prepared to assist with the calculation of proportionate share of the Collective Pension Amounts associated with the governmental employers, as needed.

Based on guidance from the OTRS Board, each governmental employer's proportionate share will be determined based on the employer's contribution to OTRS as a percentage of the total contribution to OTRS by all employers. However, an additional adjustment will be made to the allocation to account for the comprehensive universities' short-term obligation to pay the 2.5% initial funding surcharge associated with the Alternate Retirement Plan (ARP).

The additional adjustment for the comprehensive universities is based on the present value of the remaining initial funding surcharge contributions expected to be made by the comprehensive universities. The number of remaining payments will be based on the most recent assessment of the initial funding surcharge as outlined in the "Agreement of Understanding Entered into Among OSU, OU and OTRS."

## Support Provided by Nonemployer Contributing Entity

The State of Oklahoma contributes a percentage of its revenues from sales taxes, use taxes, corporate income taxes, individual income taxes, and lottery proceeds to OTRS. Since the State makes contributions to a pension plan that is used to provide pensions to the employees of other entities (e.g., school districts), the State is considered a nonemployer contributing entity for OTRS.

According to the criteria outlined in paragraph 15 of Statement 68, the State is not in a Special Funding Situation with OTRS. The primary reason is that the State's contributions are dependent upon one or more events or circumstances unrelated to the pensions. As a result, paragraph 58 of Statement 68 indicates that each governmental employer should recognize "revenue" equal to the governmental employer's proportionate share of the contributions to the pension plan from nonemployer contributing entities. The accounting treatment for this support provided by a nonemployer contributing entity should be treated in the same manner as the governmental employer would treat a grant in the entity-wide financial statements.

For the fiscal year ending June 30, 2018, support provided to OTRS by nonemployer contributing entities totaled \$318,172,751.

## Statement of Changes in Fiduciary Net Position as of June 30, 2018

Fiscal Year	<b>2018</b>
<b>Additions</b>	
Contributions	
Member contributions, including state credit	\$ 312,866,576
Grant matching funds	26,437,350
State contribution	318,172,751
Employer/district contributions	413,068,467
<b>Total Contributions</b>	<b>\$ 1,070,545,144</b>
Net investment earnings	
Investment income	\$ 1,523,682,790
Investment expenses	(68,076,942)
<b>Net Investment Income</b>	<b>\$ 1,455,605,848</b>
<b>Total Additions</b>	<b>\$ 2,526,150,992</b>
<b>Deductions</b>	
Benefit Payments	\$ 1,323,912,271
Refunds	42,940,983
Administrative Expense	4,200,021
Other	0
<b>Total Deductions</b>	<b>\$ 1,371,053,275</b>
<b>Net Increase in Net Position</b>	<b>\$ 1,155,097,717</b>
<b>Net Position Restricted for Pensions</b>	
Beginning of Year	\$ 14,989,975,076
End of Year	\$ 16,145,072,793

*This reconciliation only includes the items needed to reconcile the changes in Net Pension Liability during the fiscal year. The Reconciliation of Fiduciary Net Position required by GASB may require additional detail regarding the changes throughout the year.*

## SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

### Schedule of Changes in the Employers' Net Pension Liability and Related Ratios

Fiscal year ending June 30,	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
<b>Total Pension Liability</b>					
Service Cost	\$ 432,592,587	\$ 446,728,754	\$ 428,904,761	\$ 415,702,261	\$ 409,199,801
Interest	1,586,869,029	1,599,025,933	1,609,511,334	1,538,893,982	1,491,722,137
Benefit Changes	18,410,937	0	0	0	0
Difference between actual & expected experience	(99,947,351)	(373,928,623)	(36,212,168)	(159,980,414)	(105,344,633)
Assumption Changes	0	(482,042,966)	933,294,515	346,488,630	0
Benefit Payments	(1,323,912,271)	(1,281,816,606)	(1,257,276,705)	(1,201,350,907)	(1,153,051,607)
Refunds	(42,940,983)	(40,944,298)	(36,109,832)	(35,240,176)	(28,718,256)
<b>Net Change in Total Pension Liability</b>	<b>\$ 571,071,948</b>	<b>\$ (132,977,806)</b>	<b>\$ 1,642,111,905</b>	<b>\$ 904,513,376</b>	<b>\$ 613,807,442</b>
<b>Total Pension Liability - Beginning</b>	<b>21,625,384,047</b>	<b>21,758,361,853</b>	<b>20,551,132,567</b>	<b>19,646,619,191</b>	<b>19,032,811,749</b>
<b>Total Pension Liability - Ending (a)</b>	<b><u>\$ 22,196,455,995</u></b>	<b><u>\$ 21,625,384,047</u></b>	<b><u>\$ 22,193,244,472</u></b>	<b><u>\$ 20,551,132,567</u></b>	<b><u>\$ 19,646,619,191</u></b>
<b>Plan Fiduciary Net Position</b>					
Contributions - Employer/State	\$ 757,678,568	\$ 698,695,713	\$ 725,425,216	\$ 728,442,070	\$ 707,052,675
Contributions - Member	312,866,576	292,949,337	294,459,090	303,677,304	301,300,811
Net Investment Income	1,455,605,848	1,945,898,975	(357,443,247)	428,855,748	2,571,707,952
Benefit Payments	(1,323,912,271)	(1,281,816,606)	(1,257,276,705)	(1,201,350,907)	(1,153,051,607)
Refunds	(42,940,983)	(40,944,298)	(36,109,832)	(35,240,176)	(28,718,256)
Administrative Expense	(4,200,021)	(4,028,080)	(4,458,337)	(4,358,938)	(4,282,605)
Other	0	0	0	0	0
<b>Net Change in Plan Fiduciary Net Position</b>	<b>\$ 1,155,097,717</b>	<b>\$ 1,610,755,041</b>	<b>\$ (635,403,815)</b>	<b>\$ 220,025,101</b>	<b>\$ 2,394,008,970</b>
<b>Plan Fiduciary Net Position - Beginning</b>	<b>14,989,975,076</b>	<b>13,379,220,035</b>	<b>14,449,506,469</b>	<b>14,229,481,368</b>	<b>11,835,472,398</b>
<b>Plan Fiduciary Net Position - Ending (b)</b>	<b><u>\$ 16,145,072,793</u></b>	<b><u>\$ 14,989,975,076</u></b>	<b><u>\$ 13,814,102,654</u></b>	<b><u>\$ 14,449,506,469</u></b>	<b><u>\$ 14,229,481,368</u></b>
<b>Net Pension Liability - Ending (a) - (b)</b>	<b>\$ 6,051,383,202</b>	<b>\$ 6,635,408,971</b>	<b>\$ 8,379,141,818</b>	<b>\$ 6,101,626,098</b>	<b>\$ 5,417,137,823</b>
<b>Plan Fiduciary Net Position as a Percentage</b>					
<b>of Total Pension Liability</b>	72.74 %	69.32 %	62.24 %	70.31 %	72.43 %
<b>Covered Employee Payroll</b>	\$ 4,149,557,077	\$ 4,070,723,673	\$ 4,206,558,429	\$ 4,338,247,200	\$ 4,304,297,300
<b>Net Pension Liability as a Percentage</b>					
<b>of Covered Employee Payroll</b>	145.83 %	163.00 %	199.19 %	140.65 %	125.85 %

**Notes to Schedule:**

The covered employee payroll is an estimate of the actual payroll, imputed from individual member contributions.

The assumption change in fiscal year 2015 is attributable to the new assumptions adopted by the Board in May 2015.

The assumption change in fiscal year 2016 is attributable to the new economic assumptions adopted by the Board in September 2016.

The beginning balances for the total pension liability and the plan fiduciary net position were both restated as of June 30, 2016 to remove \$434,882,619 which will be reported as an OPEB going forward.

The assumption change in fiscal year 2017 is attributable to the change in assumed election rate for the Supplemental Medical Insurance benefit adopted by the Board in August 2017.

# SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

## Schedule of Employer Contributions

FY Ending June 30	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2014	\$602,936,966	\$707,052,675	\$ (104,115,709)	\$ 4,304,297,300	16.43%
2015	550,652,420	728,442,070	(177,789,650)	4,338,247,200	16.79%
2016	723,528,050	725,425,216	(1,897,166)	4,206,558,429	17.25%
2017	689,580,590	698,695,713	(9,115,123)	4,070,723,673	17.16%
2018	705,424,703	757,678,568	(52,253,865)	4,149,557,077	18.26%

### Notes to Schedule of Contributions

**Valuation Date:** June 30, 2018

**Notes** Members and employers contribute based on statutorily fixed rates. The State of Oklahoma contributes 5.0% of revenues from sales taxes, use taxes, corporate and individual income taxes, and lottery proceeds. An additional contribution is made for members whose salary is paid from federal funds or certain grant money.

Beginning with the fiscal year ending June 30, 2016, the Actuarially Determined Employer Contribution (ADEC) is determined as the employer contribution amount necessary to discharge the Unfunded Actuarial Accrued Liability over a period equal to the funding period for the current actuarial valuation for plan funding purposes (i.e., 17 years as of June 30, 2017). However, in no event shall the amortization period be in excess of a fixed period of twenty (20) years. ADEC rates are calculated as of June 30.

Beginning with the fiscal year ending June 30, 2017, an actuarially determined portion of the employers' contributions (0.07% of pay for FY2018) is allocated to the OPEB Subaccount and reported under GASB 74. As a result, these contributions are not included in either the actual or actuarially determined contributions above.

The ADEC was previously determined as the total employer contribution necessary to fund the normal cost and to amortize the UAAL as a level percentage of payroll over 30 years.

**Methods and Assumptions Used to Determine Contribution Rates:**

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Percentage of Payroll
Remaining Amortization Period	20 years
Asset Valuation Method	5-year smoothed market
Inflation	2.50%
Salary Increases	Composed of 2.50% inflation, plus 0.75% productivity increase rate, plus step-rate promotional increases for members with less than 25 years of service.
Investment Rate of Return	7.50%
Retirement Age	Experience-based table of rates based on age, service, and gender. Adopted by the Board in May 2015 in conjunction with the five year experience study for the period ending June 30, 2014.
Mortality	RP-2000 Combined Mortality Table for males with White Collar Adjustments with fully generational projection by Scale BB from the table's base year of 2000. For females, the GRS Southwest Region Teacher Mortality Table, scaled at 105%, with fully generational projection by Scale BB from the table's base year of 2012.

**GOVERNMENTAL EMPLOYER FINANCIAL STATEMENTS**  
**Pension Expense for Fiscal Year Ending June 30, 2018**  
**To be used for Governmental Employer Reporting for Fiscal Years Ending**  
**Between June 30, 2018 and June 30, 2019**

**Expense**

1. Total service cost	\$ 432,592,587
2. Interest on total pension liability	1,586,869,029
3. Current-period benefit changes	18,410,937
4. Member contributions	(312,866,576)
5. Projected earnings on plan investments	(1,112,979,076)
6. Administrative expense	4,200,021
7. Other	0
8. Recognition of beginning deferred outflows (inflows) due to liabilities	(1,279,054)
9. Recognition of beginning deferred outflows (inflows) due to assets	(143,441,635)
<b>10. Total Pension Expense</b>	<b>\$ 471,506,233</b>

**Recognition of Deferred Outflows and Inflows of Resources**

According to paragraph 33 of GASB No. 68, *differences between expected and actual experience and changes in assumptions* are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active employees and inactive employees) determined as of the beginning of the measurement period.

At the beginning of the 2018 fiscal year, the expected remaining service lives of all employees was 942,597 years for OTRS. Additionally, the OTRS plan membership (active employees and inactive employees) was 175,052. As a result, the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the 2018 fiscal year is 5.38 years.

Additionally, *differences between projected and actual earnings on pension plan investments* should be recognized in pension expense using a systematic and rational method over a closed five-year period.

For this purpose, the deferred outflows and inflows of resources are recognized in the pension expense as a level dollar amount over the closed period identified above.



**GOVERNMENTAL EMPLOYER FINANCIAL STATEMENTS**  
**Statement of Outflows and Inflows Arising from Current and Prior Reporting Periods**  
**For Plan Year Ending June 30, 2018**  
**To be used for Governmental Employer Reporting for Fiscal Years Ending**  
**Between June 30, 2018 and June 30, 2019**

**A. New Deferred Outflows and Inflows of Resources by Source Established in Fiscal Year**

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 0	\$ 99,947,351	\$ (99,947,351)
2. Assumption Changes	0	0	0
3. Net Difference between projected and actual earnings on pension plan investments	0	342,626,772	(342,626,772)
<b>4. Total</b>	<b>\$ 0</b>	<b>\$ 442,574,123</b>	<b>\$ (442,574,123)</b>

**B. Outflows and Inflows of Resources by Source to be recognized in Current Pension Expense**

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 0	\$ 134,200,660	\$ (134,200,660)
2. Assumption Changes	219,154,695	86,233,089	132,921,606
3. Net Difference between projected and actual earnings on pension plan investments	441,593,636	585,035,271	(143,441,635)
<b>4. Total</b>	<b>\$ 660,748,331</b>	<b>\$ 805,469,020</b>	<b>\$ (144,720,689)</b>

**C. Deferred Outflows and Deferred Inflows of Resources by Source to be recognized in Future Pension Expenses**

	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
1. Differences between expected and actual experience	\$ 0	\$ 417,801,545	\$ (417,801,545)
2. Assumption Changes	566,613,492	309,576,788	257,036,704
3. Net Difference between projected and actual earnings on pension plan investments	742,050,698	847,116,639	(105,065,941)
<b>4. Total</b>	<b>\$ 1,308,664,190</b>	<b>\$ 1,574,494,972</b>	<b>\$ (265,830,782)</b>

**D. Deferred Outflows and Deferred Inflows of Resources by Year to be recognized in Future Pension Expenses**

Period	Outflows of Resources	Inflows of Resources	Net Outflows of Resources
Fiscal Year + 1	\$ 660,748,327	\$ 479,964,178	\$ 180,784,149
Fiscal Year + 2	519,611,761	468,629,626	50,982,135
Fiscal Year + 3	128,304,102	441,394,721	(313,090,619)
Fiscal Year + 4	0	177,446,971	(177,446,971)
Fiscal Year + 5	0	7,059,476	(7,059,476)
Thereafter	0	0	0
<b>Total</b>	<b>\$ 1,308,664,190</b>	<b>\$ 1,574,494,972</b>	<b>\$ (265,830,782)</b>

# GOVERNMENTAL EMPLOYER FINANCIAL STATEMENTS

## Recognition of Deferred Outflows and Inflows of Resources

For Plan Year Ending June 30, 2018

**To be used for Governmental Employer Reporting for Fiscal Years Ending  
Between June 30, 2018 and June 30, 2019**

Year Established	Initial Amount	Initial Recognition Period	Current Year Recognition	Remaining Recognition	Remaining Recognition Period
<b>Deferred Outflow (Inflow) due to Differences Between Expected and Actual Experience on Liabilities</b>					
2014	(105,344,633)	6.32	(16,668,455)	(22,002,358)	1.32
2015	(159,980,414)	6.22	(25,720,324)	(57,099,118)	2.22
2016	(36,212,168)	5.71	(6,341,886)	(17,186,510)	2.71
2017	(373,928,623)	5.59	(66,892,420)	(240,143,783)	3.59
2018	(99,947,351)	5.38	(18,577,575)	(81,369,776)	4.38
Total			(134,200,660)	(417,801,545)	
<b>Deferred Outflow (Inflow) due to Assumption Changes</b>					
2014	0	6.32	0	0	1.32
2015	346,488,630	6.22	55,705,568	123,666,358	2.22
2016	933,294,515	5.71	163,449,127	442,947,134	2.71
2017	(482,042,966)	5.59	(86,233,089)	(309,576,788)	3.59
2018	0	5.38	0	0	4.38
Total			132,921,606	257,036,704	
<b>Deferred Outflow (Inflow) due to Differences Between Projected and Actual Earnings on Plan Investments</b>					
2014	(1,627,524,210)	5.00	(325,504,842)	0	0.00
2015	705,682,831	5.00	141,136,567	141,136,563	1.00
2016	1,502,285,342	5.00	300,457,069	600,914,135	2.00
2017	(955,025,370)	5.00	(191,005,074)	(573,015,222)	3.00
2018	(342,626,772)	5.00	(68,525,355)	(274,101,417)	4.00
Total			(143,441,635)	(105,065,941)	