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OKLAHOMA PUBLIC EMPLOYEES RETIREMENT SYSTEM

State of Oklahoma
Uniform Retirement System For Justices & Judges

Actuarial Valuation Report
as of July 1, 2016

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CONSULTING, LLC
The experience and dedication you deserve

October 12, 2016

Board of Trustees
Oklahoma Public Employees Retirement System
5801 N. Broadway Extension, Suite 200
P.O. Box 53007
Oklahoma City, OK 73152-3007

Members of the Board:

In this report are submitted the results of the annual valuation of the assets and liabilities of the Uniform Retirement System for Justices and Judges (URSJJ), prepared as of July 1, 2016.

The purpose of this report is to provide a summary of the funded status of the System as of July 1, 2016 and to provide the actuarially determined rate. While not verifying the data at the source, the actuary performed tests for consistency and reasonability.

The promised benefits of the System are included in the actuarially calculated contribution rates which are developed using the Entry Age Normal cost method. A five-year market related value of assets is used for actuarial valuation purposes. Gains and losses are reflected in the unfunded actuarial accrued liability (UAAL) that is being amortized by regular annual contributions as a level percentage of payroll, on the assumption that payroll will increase by 4.00% annually.

Since the previous valuation, the investment return assumption has been lowered from 7.50% net of investment expenses, compounded annually to 7.25%.

As in recent valuations, liabilities have been calculated without considering future cost of living adjustments (COLAs) in keeping with House Bill 2132 (2011).

We have prepared the Schedule of Funding Progress and Trend Information shown in the financial section of the Comprehensive Annual Financial Report. All historical information that references a valuation date prior to July 1, 2010 was prepared by the previous actuarial firm.

This is to certify that the independent consulting actuaries are members of the American Academy of Actuaries and have experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

Future actuarial results may differ significantly from the current results presented in this report due to factors such as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Because the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

We have also reviewed the supplemental medical benefits provided by the System under Section 401(h) of the Internal Revenue Code and have determined that these benefits are subordinate to the retirement benefits as required.

In our opinion, in order for the System to meet all the benefit obligations of the plan for the current active and inactive members, contributions equal to or exceeding the actuarially determined rate are necessary. The current contribution rate is below the normal cost rate and not sustainable indefinitely. The scheduled contribution increases, however, bring the contribution rate above the normal cost rate.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,

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

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

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OVERVIEW

The Uniform Retirement System for Justices and Judges ("URSJJ" or "System") provides retirement benefits for all Justices and Judges of the Oklahoma Supreme Court, Court of Criminal Appeals, Workers' Compensation Court, Court of Appeals, and District Courts. URSJJ is administered by the Oklahoma Public Employees Retirement System and its Board of Trustees.

This report presents the results of the July 1, 2016 actuarial valuation for the System. The primary purposes of performing an actuarial valuation are to:

- Determine the employer contribution rate required to fund the System on an actuarial basis;
- Evaluate the sufficiency of the statutory contribution rate;
- Disclose asset and liability measures as of the valuation date;
- Determine the experience of the System since the last valuation date; and
- Analyze and report on trends in System contributions, assets, and liabilities.

As in prior valuations, liabilities have been calculated without considering future COLAs due to the enactment of House Bill 2132 (2011). Should funding of future COLAs be provided by the System, the COLAs should be included in the actuarial valuation.

The valuation results provide a snapshot view of the System's financial condition on July 1, 2016. Due to deferred asset gains that have been recognized during FY2016 and overall positive experience on System liabilities, the actuarial value of assets exceeds the actuarial accrued liability by $29.8 million. A detailed analysis of the change in the unfunded actuarial accrued liability from July 1, 2015 to July 1, 2016 is shown on page 5.

The highlights of the valuation are shown below:

	Actuarial Valuation Date	
Funded Status $(millions)	**July 1, 2016**	**July, 1 2015**
Actuarial Accrued Liability	$ 276.4	$ 266.4
Actuarial Value of Assets	$ 306.3	$ 295.4
Unfunded Actuarial Accrued Liability	($29.8)	($29.0)
Funded Ratio (Actuarial Value)	110.8%	110.9%
Market Value of Assets	$ 293.7	$ 301.3
Funded Ratio (Market Value)	106.3%	113.1%

There was a liability gain of $7.5 million from demographic experience (2.6% of expected liability), which resulted in an actuarial accrued liability that was lower than expected. The components of this net liability gain are identified on page 5 of this report.

The estimated net return on the market value of assets was 0.5% for the year ended June 30, 2016. The actuarial value of assets is determined using a method to smooth investment gains and losses in order to

develop more stable contribution rates. The return on the actuarial value of assets was approximately 6.9% which resulted in an actuarial loss of $1.9 million.
Since the previous valuation, the investment return assumption has been lowered from 7.50% net of investment expenses, compounded annually to 7.25%. This results in an increase to the actuarial accrued liability of $5.8 million.

The actuarial contribution rate for the employer increased from July 1, 2015 to July 1, 2016:

	Actuarial Valuation Date	
Contribution Rate	**July 1, 2016**	**July 1, 2015**
Normal Cost	27.34%	26.10%
Amortization of UAAL	(9.36%)	(8.63%)
Budgeted Expenses	0.54%	0.54%
Actuarial Contribution Rate	18.52%	18.01%
Less Estimated Member Contribution Rate	8.00%	8.00%
Employer Actuarial Contribution Rate	10.52%	10.01%
Less Employer Statutory Contribution Rate	19.00%	17.50%
Contribution Shortfall/(Surplus)	(8.48%)	(7.49%)

The contribution surplus in the current valuation is 8.48%, which is an increase from last year's contribution surplus of 7.49%. The total contribution rate for the System is 27.00% (19.00% for employer and 8.00% for employee), which is below the current normal cost rate of 27.34%. The employer statutory contribution rate is scheduled to increase each year and ultimately reach a rate of 22.00% in FY2019. With a contribution rate greater than the normal cost rate and a funded ratio over 100%, the Plan should remain sustainable.

EXPERIENCE: July 1, 2015 to July 1, 2016

In many respects, an actuarial valuation can be thought of as an inventory process. The inventory is taken as of the actuarial valuation date, which for this valuation is July 1, 2016. On that date, the assets available for the payment of benefits are appraised. The assets are compared with the liabilities of the System, which are generally in excess of the assets. The actuarial process leads to a method of determining the contributions needed by members and employers in the future to balance the System assets and liabilities.

Changes in the System's assets and liabilities impacted the change in the actuarial contribution rates between July 1, 2015 and July 1, 2016. Each component is examined in the following discussion.

ASSETS

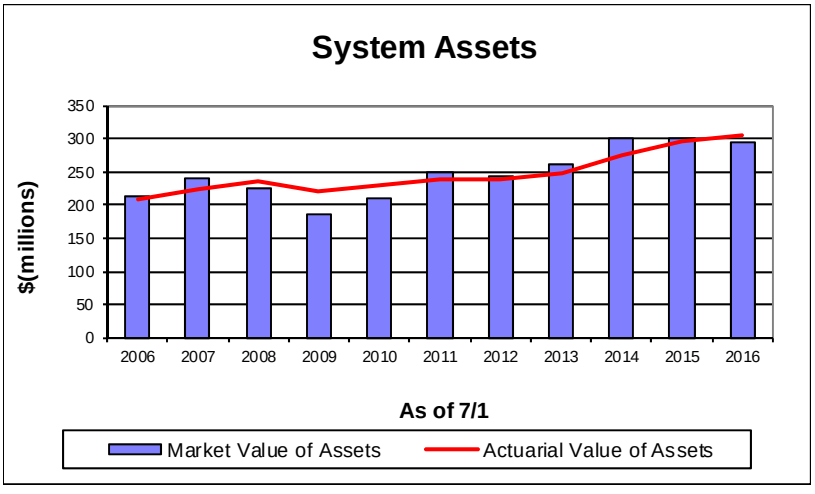
As of July 1, 2016, the System had total funds when measured on a market value basis of $293.7 million. This was a decrease of $7.6 million from the July 1, 2015 figure of $301.3 million. The market value of assets is not used directly in the calculation of the actuarial contribution rate. An asset valuation method, which smoothes the effect of market fluctuations, is used to determine the value of assets used in the valuation, called the "actuarial value of assets." Differences between the actual return on the market value of assets and the assumed return on the actuarial value of assets are phased in over a five-year period. The resulting value must be no less than 80% of the market value and no more than 120% of market value, referred to as "the corridor." See Table 3 for the detailed development of the actuarial value of assets as of July 1, 2016.

The actuarial value of assets as of July 1, 2016 was $306.3 million. The annualized dollar-weighted rate of return for FY2016, measured on the actuarial value of assets, was approximately 6.9%, which resulted in an actuarial loss of $1.9 million. Measured on the market value of assets, the estimated rate of return was 0.5%, net of investment expenses.

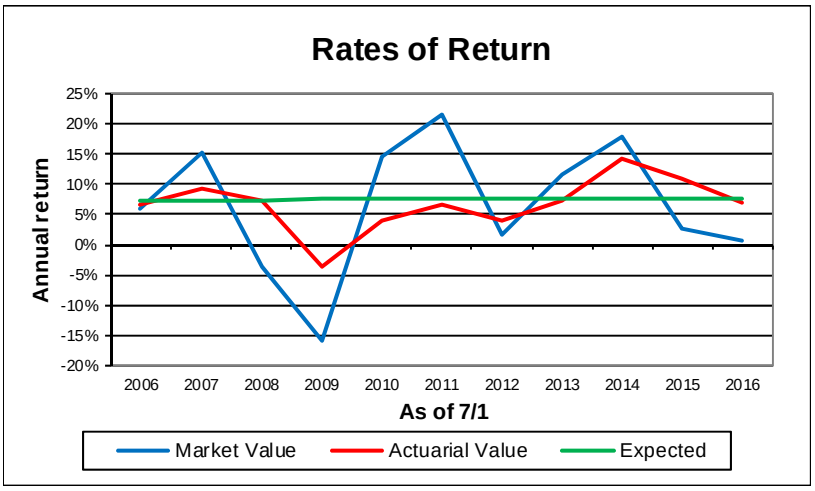
The components of the change in the market and actuarial value of assets for the System are set forth below:

	Market Value $(millions)	Actuarial Value $(millions)
Net Assets, July 1, 2015	$ 301	$ 295
· Employer and Member Contributions	8	8
· Benefit Payments and Expenses	(18)	(18)
· Investment Income/(Loss)	3	21
Preliminary Value July 1, 2016	$ 294	$ 306
Application of Corridor	N/A	N/A
Final Net Assets, July 1, 2016	$ 294	$ 306
Estimated Rate of Return	0.5%	6.9%

Due to the use of an asset smoothing method, there is about $12.5 million of deferred investment loss that has not yet been recognized. This deferred investment experience will be reflected in the actuarial value of assets over the next few years.



There have been years during the last decade in which the actuarial value of assets has been both higher and lower than the market value, which is what would be expected using an asset smoothing method.



Rates of return on the market value of assets are very volatile. The more stable return on the actuarial value of assets illustrates the advantage of using an asset smoothing method.

SYSTEM LIABILITIES

The actuarial accrued liability is that portion of the present value of future benefits that will not be paid by future normal costs. The difference between this liability and the asset value at the same date is referred to as the unfunded actuarial accrued liability (UAAL). The UAAL will be reduced if the employers' contributions exceed the employers' normal cost for the year, after allowing for interest earned on the previous years' unfunded actuarial accrued liability. Benefit improvements, experience gains/losses, and changes in the actuarial assumptions and methods will also impact the total actuarial accrued liability and the unfunded portion thereof.

The unfunded actuarial accrued liability as of July 1, 2016 is:

Actuarial Accrued Liability	$276,433,541
Actuarial Value of Assets	306,256,213
Unfunded Actuarial Accrued Liability/(Surplus)	$ (29,822,672)

See Table 5 for the detailed development of the Actuarial Accrued Liability and Table 7 for the calculation of the Unfunded Actuarial Accrued Liability.

Other factors influencing the UAAL from year to year include actual experience versus that expected based on the actuarial assumptions (both asset and liability), changes in the actuarial assumptions, procedures or methods and changes in benefit provisions. Since the previous valuation, the investment return assumption was lowered from 7.50% to 7.25%. The actual experience measured in this valuation is that which occurred during the plan year ending June 30, 2016. There was an experience loss on the actuarial value of assets and an experience gain on liabilities. The net gain resulted in a $5.6 million decrease in the UAAL.

Between July 1, 2015 and July 1, 2016 the change in the unfunded actuarial accrued liability for the System was as follows:

	$(millions)
Unfunded Actuarial Accrued Liability, July 1, 2015	($29.0)
· effect of contributions above than actuarial rate	(2.5)
· expected decrease due to amortization method	0.9
· investment experience	1.9
· liability experience[1]	(7.5)
· assumption changes	5.8
· other experience	0.6
Unfunded Actuarial Accrued Liability, July 1, 2016	($29.8)

[1] Liability gain is about 2.6% of total expected actuarial accrued liability

The liability gain for the System can be allocated to the actual experience related to each actuarial assumption as follows:

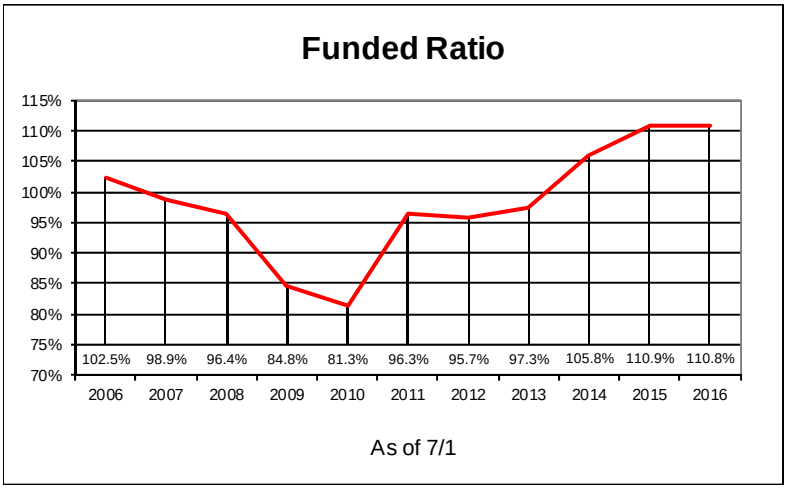
Liability Source	Impact of AAL $(millions)	% of Expected Liability
Salary Increases	($4.18)	(1.5%)
Mortality	0.26	0.1%
Termination of Employment	(0.34)	(0.1%)
Retirements	(2.10)	(0.7%)
Disability	0.09	0.0%
New Entrants and Rehires	0.16	0.1%
Miscellaneous/Data Changes	(1.37)	(0.5%)
Total (Gain)/Loss	($7.48)	(2.6%)

A detailed summary of the change in the UAAL is shown in Table 9.

In the current valuation, the actuarial value of assets exceeds the actuarial liability. This does not mean that all future benefits are paid for; rather, it indicates that the System has accumulated more assets at this point than what is required by the funding method. The ability of the System to remain in this position will depend upon both future experience and contributions received from the plan sponsor.

An evaluation of the unfunded actuarial accrued liability on a pure dollar basis may not provide a complete analysis because only the difference between the assets and liabilities (which are both very large numbers) is reflected. Another way to evaluate the unfunded actuarial accrued liability and the progress made in its funding is to track the funded status, which is the ratio of the actuarial value of assets to the actuarial accrued liability. These ratios do not indicate whether or not the plan could settle its liabilities with available assets, nor are they sufficient, on their own, to indicate the future funding needs of the System. The funded status information, on both an actuarial and market value basis, is shown in the following table in $(millions).

	7/1/2011	7/1/2012	7/1/2013	7/1/2014	7/1/2015	7/1/2016
Using Actuarial Value of Assets:						
Funded Ratio	96.3%	95.7%	97.3%	105.9%	110.9%	110.8%
Unfunded Actuarial Accrued Liability (UAAL)	$9	$11	$7	($15)	($29)	($30)
Using Market Value of Assets:						
Funded Ratio	100.6%	97.8%	103.5%	116.5%	113.1%	106.3%
Unfunded Actuarial Accrued Liability (UAAL)	($1)	$6	($9)	($43)	($35)	($17)



At the beginning of the period shown, the funded ratio was over 100%. Several factors contributed to the sharp decline in the funded ratio, including changes in the benefit provisions, contributions less than the actuarial rate, changes in actuarial assumptions, demographic experience, and investment experience. The increase in 2011 was due to the elimination of the COLA assumption and reserve as a result of legislation (HB 2132).

CONTRIBUTION RATES

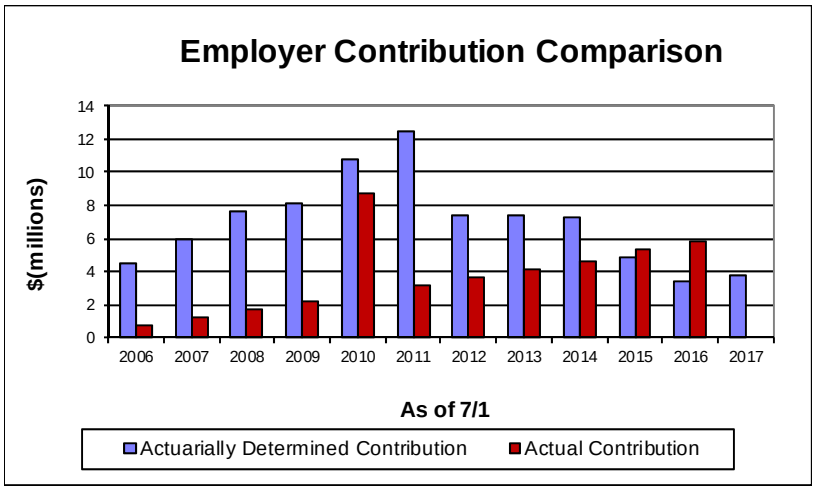
The funding objective of the System is to pay the normal cost rate plus an amount that will pay off the unfunded actuarial accrued liability over a closed 20-year period commencing July 1, 2007.

Under the Entry Age Normal cost method, the actuarial contribution rate consists of:

- A "normal cost" for the portion of projected liabilities allocated by the actuarial cost method to service of members during the year following the valuation date;
- An "unfunded actuarial accrued liability contribution" for the excess of the portion of projected liabilities allocated to service to date over the actuarial value of assets.

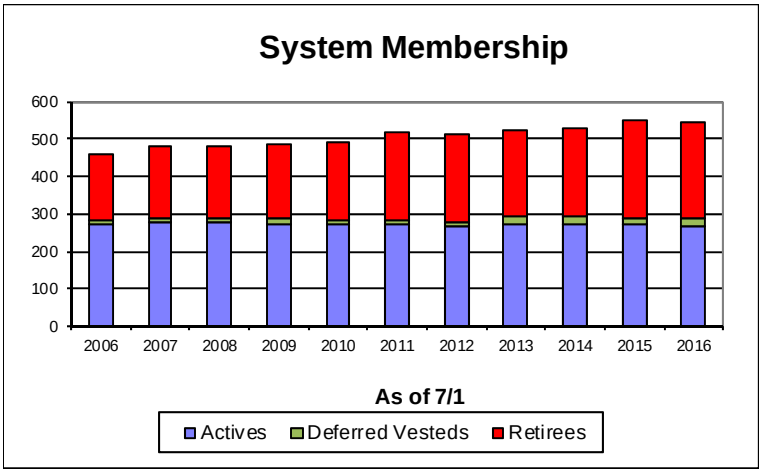
Contributions to the System are made by the members and their employers. Members pay 8.0% of compensation. The employer rate is currently 19.0% and is scheduled to increase each year until it reaches 22.0% for the fiscal year ending June 30, 2019. If all assumptions are met in future years, this contribution schedule is expected to be adequate to fund the System.

The following graph shows the total actuarially determined employer contribution compared to the amount actually received each year. The funding policy contribution equals the System's normal cost, budgeted expenses, and an amortization of the unfunded actuarial accrued liability over a 20-year closed period beginning July 1, 2007. As of July 1, 2016, 11 years remain in the amortization period.

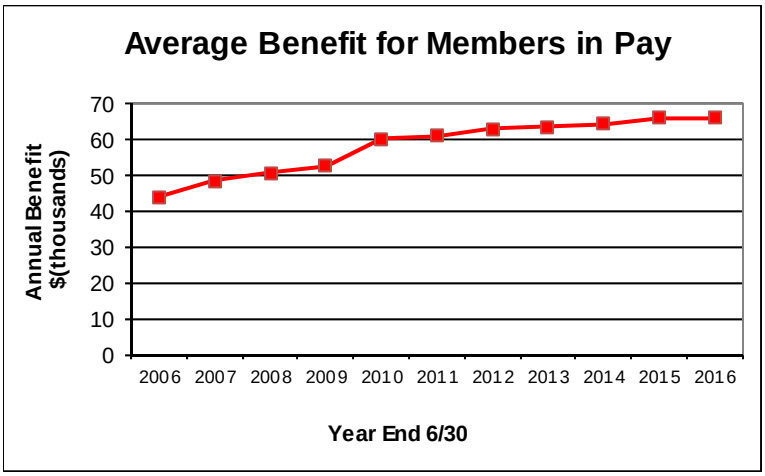


MEMBER INFORMATION

The number of active members decreased from 271 in the 2015 valuation to 269 in the 2016 valuation. The retired member and beneficiary count remains unchanged from last year and the average retirement benefit amount increased. There were 260 retirees and beneficiaries in the 2016 valuation, with an average benefit of $5,435 per month. There was no change in the average monthly benefit from the previous year.



The number of active members has been fairly stable over this time period. The number of retirees has increased slightly, which is expected in an ongoing retirement system.



The average benefit for retirees has climbed steadily over the past 10 years as members retire with higher salaries and, therefore, higher benefits than those already retired.

COMMENTS

As the graph on page 4 shows, investment experience continues to be extremely volatile which creates significant challenges when funding retirement systems. The rate of return on the market value of assets for FY 2016 was about 0.5%, while returns for the last five years have generally been below the expected rate. Because of the unfavorable investment experience in recent years, the actuarial value of assets (calculated using the asset smoothing method) exceeds the market value of assets.

Due to the asset smoothing method, the rate of return on the actuarial value of assets was 6.9%. Because this return is below the assumed rate of return for FY2016 of 7.5%, there was an actuarial loss from asset experience of $1.9 million. There was also an experience gain of $7.5 million on liabilities, largely due to salary experience resulting from pay that was lower than expected. With an actuarial gain of $5.6 million, the actuarial value of assets exceeds the actuarial accrued liability in the current valuation, and there is a $29.8 million surplus.

The unfunded actuarial accrued liability is amortized using a payment schedule that is a level percent of payroll. Unfavorable investment experience in recent years has led to an actuarial loss on assets of $1.9 million. Additionally, the assumed investment return has been lowered from 7.50% to 7.25%. The combined impact of these factors was an increase of 0.51% in the actuarial contribution rate, resulting in a total actuarial contribution rate of 18.52% in the current valuation. Also, the statutory employer contribution rate increased from 17.50% to 19.00%, so there is a contribution surplus in this year's valuation of 8.48%. The total contribution rate of 27.00% remains below the normal cost of the benefits, so absent the scheduled increases, the current excess of actuarial assets over actuarial liability would be utilized to pay for this shortfall.

The funded ratio of the System held steady during FY2016, changing from 110.9% to 110.8% when using the actuarial value of assets. As the deferred asset losses are ultimately recognized, the funded ratio will decrease, assuming all other assumptions are met.

Also, as noted earlier in the report, should funding of future COLAs be provided by the System, the COLAs should be included in the actuarial valuation.

For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below.

COMPARISON OF PRINCIPAL VALUATION RESULTS

	7/1/2016 Valuation	7/1/2015 Valuation	% Change
1. PARTICIPANT DATA			
Number of:			
Active Members	269	271	(0.7)
Retired and Disabled Members and Beneficiaries	260	260	0.0
Inactive Members	17	18	(5.6)
Total members	546	549	(0.5)
Projected Annual Salaries of Active Members	$ 34,810,851	$ 34,537,376	0.8
Annual Retirement Payments for Retired Members and Beneficiaries	$ 16,956,189	$ 16,958,732	(0.0)
2. ASSETS AND LIABILITIES			
Total Actuarial Accrued Liability	$ 276,433,541	$ 266,400,026	3.8
Market Value of Assets	$ 293,726,797	$ 301,296,105	(2.5)
Actuarial Value of Assets	$ 306,256,213	$ 295,355,061	3.7
Unfunded Actuarial Accrued Liability	$ (29,822,672)	$ (28,955,035)	3.0
Funded Ratio	110.8%	110.9%	(0.1)
3. EMPLOYER CONTRIBUTION RATES AS A PERCENT OF PAYROLL			
Normal Cost Rate	27.34%	26.10%	
Amortization of Unfunded Actuarial Accrued Liability	(9.36%)	(8.63%)	
Budgeted Expenses	0.54%	0.54%	
Total Actuarial Determined Contribution Rate	18.52%	18.01%	
Less Member Contribution Rate	8.00%	8.00%	
Employer Actuarial Determined Contribution Rate	10.52%	10.01%	
Less Statutory State Employer Contribution Rate	19.00%	17.50%	
Contribution Shortfall/(Surplus)	(8.48%)	(7.49%)	

Uniform Retirement System For Justices & Judges

Market Value of Assets

The current market value represents the "snapshot" or "cash-out" value of System assets as of the valuation date. In addition, market values of assets provide the basis for measuring investment performance. As of July 1, 2016, the market value of assets for the System was $294 million. Table 1 is a comparison, at market values, of System assets as of June 30, 2016 and June 30, 2015 in total and by investment category. Table 2 summarizes the change in the market value of assets from July 1, 2015 to June 30, 2016.

Actuarial Value of Assets

Neither the market value of assets, representing a "cash-out" value of System assets, nor the book value of assets, representing the cost of investments, may be the best measure of the System's ongoing ability to meet its obligations. A technique which dampens swings in the market value while still indirectly recognizing market values is used for determining the actuarial value of assets.

The actuarial value of assets is based on a five-year moving average of expected and actual market values determined as follows:

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

Table 3 shows the development of the actuarial value of assets as of the valuation date.

Uniform Retirement System For Justices & Judges

Table 1

Analysis of Net Assets at Market Value

	June 30, 2016		June 30, 2015	
	Amount $(millions)	% of Total	Amount $(millions)	% of Total
Cash & Equivalents	$ 3.9	1.3%	$ 3.3	1.1%
Short-term Investments	1.0	0.3%	2.1	0.7%
Government Obligations	70.0	23.3%	61.9	19.9%
Corporate Bonds	29.3	9.8%	34.6	11.2%
Domestic Equity	132.1	44.1%	137.6	44.4%
International Equity	63.4	21.2%	70.4	22.7%
Subtotal	$ 299.7	100.0%	$ 309.9	100.0%
Net Receivables/(Payables)	(6.0)		(8.6)	
Net Assets	$ 293.7		$ 301.3	

Uniform Retirement System For Justices & Judges

Table 2

Statement of Changes in Net Assets

	Fiscal Year Ended June 30	
	2016	2015
1. Market Value of Net Assets at Beginning of Year	$ 301,296,105	$ 301,469,209
2. Contributions		
a. Members	$ 2,666,001	$ 2,706,406
b. Participating court employers	5,831,884	5,295,012
c. Total contributions (2a) + (2b)	$ 8,497,885	$ 8,001,418
3. Net Investment Income		
a. Net appreciation (depreciation) in fair value of investments	$ (834,125)	$ 6,135,133
b. Interest	2,378,098	2,154,011
c. Securities lending activities	20,141	20,152
d. Total investment income/(loss) (3a) + (3b) + (3c)	$ 1,564,114	$ 8,309,296
e. Investment expenses	(122,535)	(135,875)
f. Net investment income/(loss) (3d) + (3e)	$ 1,441,579	$ 8,173,421
g. Total additions/(subtractions) (2c) + (3f)	$ 9,939,464	$ 16,174,839
4. Deductions		
a. Retirement, death, and survivor benefits	$ 17,198,048	$ 16,093,317
b. Refunds and withdrawals	161,575	111,044
c. Administrative expenses	149,149	143,582
d. Total deductions (4a) + (4b) + (4c)	$ 17,508,772	$ 16,347,943
5. Net Change in Assets (3g) - (4d)	$ (7,569,308)	$ (173,104)
6. Market Value of Net Assets at End of Year (1) + (5)	$ 293,726,797	$ 301,296,105

Uniform Retirement System For Justices & Judges

Table 3

Determination of Actuarial Value of Assets

1. Market Value as of July 1, 2015	$	301,296,105
2. Contributions		
a. Member	$	2,666,001
b. Employer		5,831,884
c. Total (a) + (b)	$	8,497,885
3. Decreases During Year		
a. Benefit payments	$	(17,198,048)
b. Refunds and withdrawals		(161,575)
c. Administrative expenses		(149,149)
d. Total (a) + (b) + (c)	$	(17,508,772)
4. Expected Return on Assets at 7.5%	$	22,265,408
5. Expected Market Value as of June 30, 2016 (1) + (2c) + (3d) + (4)	$	314,550,626
6. Actual Market Value as of June 30, 2016	$	293,726,797
7. Year End 2016 Asset Gain/(Loss) (6) - (5)	$	(20,823,829)

Schedule of Asset Gains/(Losses)

Year End	Original Amount	Recognized in Prior Years	Recognized in This Year	Recognized in Future Years
2012	$ (13,086,687)	$ (10,469,348)	$ (2,617,339)	$ 0
2013	9,509,688	5,705,814	1,901,938	1,901,936
2014	26,763,425	10,705,370	5,352,685	10,705,370
2015	(14,129,433)	(2,825,887)	(2,825,887)	(8,477,659)
2016	(20,823,829)	0	(4,164,766)	(16,659,063)
Total	$ (11,766,836)	$ 3,115,949	$ (2,353,369)	$ (12,529,416)

8. Asset Gain/(Loss) to be Recognized in the Future	$	(12,529,416)
9. Initial Actuarial Value as of June 30, 2016 (6) - (8)	$	306,256,213
10. Constraining Values:		
a. 80% of market value (6) x 0.8	$	234,981,438
b. 120% of market value (6) x 1.2	$	352,472,156
11. Actuarial Value as of June 30, 2016 (9), but not less than (10a), nor greater than (10b)	$	306,256,213

Uniform Retirement System For Justices & Judges

In the previous section, an actuarial valuation was compared with an inventory process, and an analysis was given of the inventory of assets of the System as of the valuation date, July 1, 2016. In this section, the discussion will focus on the commitments of the System, which are referred to as its liabilities.

Table 4 contains the actuarial present value of all future benefits (PVFB) for contributing members, inactive members, retirees and their beneficiaries.

The liabilities summarized in Table 4 include the actuarial present value of all future benefits expected to be paid with respect to each member. For an active member, this value includes measures of both benefits already earned and future benefits expected to be earned. For all members, active and retired, the value includes benefits earnable and payable for the rest of their lives and, if an optional benefit is chosen, for the lives of the surviving beneficiaries.

The actuarial assumptions used to determine liabilities are based on the results of an experience study covering the three-year period ended June 30, 2013, except for the investment return. The investment return assumption has been changed to 7.25% per annum for the July 1, 2016 valuation. This set of assumptions is shown in Appendix B. The liabilities reflect the benefit structure in place as of July 1, 2016.

Actuarial Liabilities

A fundamental principle in financing the liabilities of a retirement program is that the cost of its benefits should be related to the period in which benefits are earned, rather than to the period of benefit distribution. An actuarial cost method is a mathematical technique that allocates the present value of future benefits into annual costs. In order to do this allocation, it is necessary for the funding method to "break down" the present value of future benefits into two components:

(1) that which is attributable to the past; and
(2) that which is attributable to the future.

Actuarial terminology calls the part attributable to the past the "past service liability" or the "actuarial accrued liability." The portion allocated to the future is known as the "present value of future normal costs," with the specific piece of it allocated to the current year being called the "normal cost." Table 5 contains the calculation of actuarial liabilities for all groups.

In valuations prior to July 1, 2011, the System used an assumption of a 2% annual COLA each year in developing liabilities and contribution rates. The System did not have an automatic COLA provision, but ad hoc COLAs had historically been granted by the Legislature. The 2011 Oklahoma Legislature passed House Bill 2132 which removed COLAs from the definition of "non-fiscal retirement bills" in the Oklahoma Pension Legislation Actuarial Analysis Act (OPLAAA). The impact of this change was to make any COLA bill subject to all of the requirements of OPLAAA, including the requirement that such bills provide adequate funding to pay the cost. As a result, beginning with the July 1, 2011 actuarial valuation, the liabilities of the System have been calculated without a COLA assumption.

Uniform Retirement System For Justices & Judges

Table 4

Present Value of Future Benefits
As of July 1, 2016

		Total
1. Active Employees		
a. Retirement Benefit	$	169,207,157
b. Withdrawal Benefit		6,619,704
c. Pre-Retirement Death Benefit		3,730,937
d. Return of Member Contributions		473,280
e. Supplemental Medical Benefit		1,713,524
f. Subtotal	$	181,744,602
2. Inactive Nonvested Members	$	268,848
3. Inactive Vested Members	$	4,269,634
4. Disabled Members	$	2,379,735
5. Retirees	$	133,581,996
6. Beneficiaries	$	17,103,611
7. Supplemental Medical Benefit for Retirees and Inactive Vested Members	$	1,488,417
8. Total PVFB	$	340,836,843

Uniform Retirement System For Justices & Judges

Table 5

Actuarial Accrued Liability
As of July 1, 2016

		Total
1. Present Value of Future Benefits for Active Members		
a. Retirement Benefit	$	169,207,157
b. Withdrawal Benefit		6,619,704
c. Pre-Retirement Death Benefit		3,730,937
d. Return of Member Contributions		473,280
e. Supplemental Medical Benefit		1,713,524
f. Subtotal	$	181,744,602
2. Present Value of Future Normal Costs for Active Members		
a. Retirement Benefit	$	56,464,116
b. Withdrawal Benefit		5,092,361
c. Pre-Retirement Death Benefit		1,386,112
d. Return of Member Contributions		820,077
e. Supplemental Medical Benefit		640,636
f. Subtotal	$	64,403,302
3. Present Value of Future Benefits for Inactive Members		159,092,241
4. Total Actuarial Accrued Liability (1f) - (2f) + (3)	$	276,433,541

Uniform Retirement System For Justices & Judges

In the previous two sections, attention has been focused on the assets and the liabilities (present value of future benefits) of the System. A comparison of Tables 3 and 4 indicates that there is a shortfall in current actuarial assets needed to meet the present value of all future benefits for current members and beneficiaries.

In an active system, there will always be a difference between the assets and the present value of all future benefits. An actuarial valuation determines a schedule of future contributions that will provide for this funding in an orderly fashion.

The method used to determine the incidence of the contributions in various years is called the actuarial cost method. Under an actuarial cost method, the contributions required to meet the difference between current assets and current liabilities are allocated each year between two elements: (1) the normal cost; and (2) the payment on the unfunded actuarial accrued liability.

The term "fully funded" is often applied to a system in which contributions at the normal cost rate are sufficient to pay for the benefits of existing employees as well as for those of new employees. More often than not, systems are not fully funded, either because of past benefit improvements that have not been completely funded and/or because of actuarial deficiencies that have occurred because experience has not been as favorable as anticipated under the actuarial assumptions. Under these circumstances, an unfunded actuarial accrued liability (UAAL) exists.

Description of Rate Components

The actuarial cost method used by the System is the traditional Entry Age Normal (EAN) cost method as a level percent of pay. Under the EAN cost method, the actuarial present value of each member's projected benefit is allocated on a level basis over the member's compensation between the entry age of the member and the assumed exit age. The portion of the actuarial present value allocated to the valuation year is called the normal cost. The actuarial present value of benefits allocated to prior years of service is called the actuarial accrued liability. The unfunded actuarial accrued liability represents the difference between the actuarial accrued liability and the actuarial value of assets as of the valuation date. The unfunded actuarial accrued liability is calculated each year and reflects experience gains/losses.

Effective with the July 1, 2008 valuation, the UAAL is amortized as a level percent of payroll over a closed 20-year period commencing July 1, 2007. For July 1, 1998 and prior years, the unfunded actuarial accrued liability was amortized over 25 years from July 1, 1987. For the July 1, 1999 valuation, the amortization period was changed to 40 years from July 1, 1987. Given a stable active workforce, the level percent of payroll amortization method is expected to produce a payment stream that is constant as a percent of covered payroll.

Contribution Rate Summary

The normal cost rate is developed in Table 6. Table 7 illustrates the development of the contribution rate for amortization of the unfunded actuarial accrued liability. Table 8 explains the development of the total actuarial contribution rate.

Uniform Retirement System For Justices & Judges

Table 6

Normal Cost Contribution Rates
As a Percentage of Salary

		Total	% of Pay
1. Normal Cost			
a. Retirement Benefit	$	8,430,616	24.22%
b. Withdrawal Benefit		632,917	1.82%
c. Pre-Retirement Death Benefit		206,581	0.59%
d. Return of Member Contributions		133,354	0.38%
e. Supplemental Medical Benefit		114,344	0.33%
f. Total	$	9,517,812	27.34%
2. Estimated Payroll for the Year	$	34,810,851	
3. Normal Cost Rate (1f)/(2)		27.34%	

Uniform Retirement System For Justices & Judges

Table 7

Unfunded Actuarial Accrued Liability Contribution Rate

1. Actuarial Present Value of Future Benefits	$	340,836,843
2. Actuarial Present Value of Future Normal Costs		64,403,302
3. Actuarial Accrued Liability (1) - (2)	$	276,433,541
4. Actuarial Value of Assets		306,256,213
5. Unfunded Actuarial Accrued Liability (UAAL) (3) - (4)	$	(29,822,672)
6. Amortization of UAAL over 20 years from July 1, 2007 (assumed mid-year) *	$	(3,259,254)
7. Total Estimated Payroll for Year Ending June 30, 2017	$	34,810,851
8. Amortization as a Percent of Payroll		(9.36%)

*The UAAL is amortized as a level percent of payroll, assuming payroll increases 4.0% per year.

Uniform Retirement System For Justices & Judges

Table 8

Actuarial Contribution Rate

	July 1 2016	July 1 2015
1. Total Normal Cost Rate	27.34%	26.10%
2. Amortization of UAAL[1]	(9.36%)	(8.63%)
3. Budgeted Expenses[2]	0.54%	0.54%
4. Total Actuarial Contribution Rate (1) + (2) + (3)	18.52%	18.01%
5. Member Contribution Rate	8.00%	8.00%
6. Employer Actuarial Contribution Rate (4) - (5)	10.52%	10.01%

[1] Amortization of UAAL is a level percent of payroll.

[2] Provided by the System.

Uniform Retirement System For Justices & Judges

Table 9

Calculation of Actuarial Gain/(Loss)

1. Expected Actuarial Accrued Liability		
a. Actuarial accrued liability at July 1, 2015	$	266,400,026
b. Normal cost at July 1, 2015		9,013,309
c. Benefit payments for fiscal year ending June 30, 2016		(17,359,623)
d. Interest on (a), (b), and (c)		20,016,783
e. Assumption changes		5,843,192
f. Expected actuarial accrued liability as of July 1, 2016	$	283,913,687
2. Actuarial Accrued Liability at July 1, 2016	$	276,433,541
3. Actuarial Accrued Liability Gain/(Loss) (1e) - (2)	$	7,480,146
4. Expected Actuarial Value of Assets		
a. Actuarial value of assets at July 1, 2015	$	295,355,061
b. Contributions for fiscal year ending June 30, 2016		8,497,885
c. Benefit payments and administrative expenses for fiscal year ending June 30, 2016		(17,508,772)
d. Interest on (a), (b), and (c)		21,819,830
e. Expected actuarial value of assets as of July 1, 2016 (a) + (b) + (c) + (d)	$	308,164,004
5. Actuarial Value of Assets at July 1, 2016	$	306,256,213
6. Actuarial Value of Assets Gain/(Loss) (5) - (4e)	$	(1,907,791)
7. Net Actuarial Gain/(Loss) (3) + (6)	$	5,572,355

Uniform Retirement System For Justices & Judges

Table 10

Summary of Contribution Requirements

	Actuarial Valuation as of July 1, 2016	Actuarial Valuation as of July 1, 2015	Percent Change
1. Expected Annual Payroll	$ 34,810,851	$ 34,537,376	0.8%
2. Total Normal Cost	$ 9,517,812	$ 9,013,309	5.6%
3. Unfunded Actuarial Accrued Liability	$ (29,822,672)	$ (28,955,035)	3.0%
4. Amortization of Unfunded Actuarial Accrued Liability over 20 Years from July 1, 2007*	$ (3,259,254)	$ (2,981,803)	9.3%
5. Budgeted Expenses (Provided by the System)	$ 187,316	$ 185,704	0.9%
6. Total Required Contribution (2) + (4) + (5)	$ 6,445,874	$ 6,217,210	3.7%
7. Estimated Member Contributions	$ 2,784,868	$ 2,762,990	0.8%
8. Required Employer Contribution (6) - (7)	$ 3,661,006	$ 3,454,220	6.0%
9. Previous Year's Actual Contribution			
a. Member	$ 2,666,001	$ 2,706,406	(1.5%)
b. Employer	5,831,884	5,295,012	10.1%
c. Total	$ 8,497,885	$ 8,001,418	6.2%

*Amortization of UAAL is a level percent of payroll.

Uniform Retirement System For Justices & Judges

Governmental Accounting Standards Board Statement No. 25, Financial Reporting for Defined Benefit Pension Plans as amended by GASB 50, (referred to as GASB 25), establishes financial reporting standards for defined benefit pension plans. Beginning with fiscal years ending after June 15, 2014, a new standard, GASB 67, replaced GASB 25 for Plan reporting. A separate report will provide this information.

Governmental Accounting Standards Board Statement No. 27, establishes financial reporting standards for employers of defined benefit pension plans. Beginning with fiscal years ending after June 15, 2015, a new standard, GASB 68, replaced GASB 27 for Plan reporting. A separate report will provide this information.

In this section, we provide exhibits showing the funding history, the expected benefit payments, and the present value of accumulated benefits.

Uniform Retirement System For Justices & Judges

Table 11

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b)-(a)	Funded Ratio (a)/(b)	Covered Payroll (c)	UAAL as a Percent of Covered Payroll ((b) - (a))/(c)
7/1/2008	$ 235,297,077	$ 244,062,321	$ 8,765,244	96.4%	$ 32,389,296	27.1%
7/1/2009	221,576,179	261,396,022	39,819,843	84.8%	33,579,668	118.6%
7/1/2010	230,010,299	282,765,405	52,755,106	81.3%	35,023,262	150.6%
7/1/2011	237,626,663	246,792,232	9,165,569	96.3%	34,700,819	26.4%
7/1/2012	238,553,638	249,378,900	10,825,262	95.7%	33,336,632	32.5%
7/1/2013	247,531,035	254,408,963	6,877,928	97.3%	34,325,368	20.0%
7/1/2014	274,070,696	258,787,677	(15,283,019)	105.9%	34,281,695	(44.6%)
7/1/2015	295,355,061	266,400,026	(28,955,035)	110.9%	34,537,376	(83.8%)
7/1/2016	306,256,213	276,433,541	(29,822,672)	110.8%	34,810,851	(85.7%)

Uniform Retirement System For Justices & Judges

Table 12

Actuarial Present Value of Accumulated Benefits

The actuarial present value of vested and non-vested accumulated benefits is computed on an ongoing System-wide basis in order to provide information on benefit liabilities for historical purposes. In this calculation, a determination is made of all benefits earned by current participants as of the valuation date; the actuarial present value is then computed using demographic assumptions and an assumed interest rate. Future salary or accrual of future benefit service are not considered. This information may not be useful as an indication of the fund needed to settle liabilities.

	July 1	
	2016	2015
Vested benefits		
Active members	$ 84,884,391	$ 78,043,574
Vested terminated members	4,269,634	3,948,873
Unclaimed contributions	268,848	674,292
Retirees and beneficiaries	153,065,342	152,102,327
Supplemental medical insurance premiums	2,694,855	3,092,556
Total vested benefits	$ 245,183,070	$ 237,861,622
Nonvested benefits for active members	$ 8,023,696	$ 6,641,900
Total accumulated benefits	$ 253,206,766	$ 244,503,522
Market value of assets available for benefits	$ 293,726,797	$ 301,296,105
Funded ratio	116.0%	123.2%
Number of members		
Vested members		
Active members	154	155
Vested terminated members	17	18
Retirees and beneficiaries	260	260
Total vested members	431	433
Nonvested active members	115	116
Total members	546	549

Uniform Retirement System For Justices & Judges

Table 12 (continued)

Actuarial Present Value of Accumulated Benefits

A statement of changes in the actuarial present value of accumulated System benefits follows. This statement shows the effect of certain events on the actuarial present value shown on the previous page.

Present value of accrued benefits as of July 1, 2015	$	244,503,522
Increase/(decrease) during the year attributable to:		
Benefits accrued and (gains)/losses	$	8,364,320
Increase due to interest		17,698,547
Benefits paid		(17,359,623)
Net increase/(decrease)	$	8,703,244
Present value of accrued benefits as of July 1, 2016	$	253,206,766

Uniform Retirement System For Justices & Judges

Table 13

Projected Benefit Payments

The table below shows estimated benefits expected to be paid over the next ten years, based on the assumptions used in this valuation. The "Actives" column shows benefits expected to be paid to members currently active on July 1, 2016. The "Retirees" column shows benefits as of July 1, 2016 expected to be paid to all members receiving benefit payments or to members who have terminated employment and are entitled to a deferred vested benefit.

Retirement, Survivor and Withdrawal Benefits

Year Ending June 30	Actives	Retirees	Total
2017	$ 1,449,000	$ 16,852,000	$ 18,301,000
2018	2,992,000	16,489,000	19,481,000
2019	4,608,000	16,063,000	20,671,000
2020	6,190,000	15,713,000	21,903,000
2021	7,666,000	15,329,000	22,995,000
2022	9,175,000	14,900,000	24,075,000
2023	10,663,000	14,524,000	25,187,000
2024	11,951,000	14,060,000	26,011,000
2025	13,274,000	13,549,000	26,823,000
2026	14,737,000	13,028,000	27,765,000

Supplemental Medical Premium Benefits

Year Ending June 30	Actives	Retirees	Total
2017	$ 18,000	$ 171,000	$ 189,000
2018	38,000	165,000	203,000
2019	58,000	158,000	216,000
2020	77,000	155,000	232,000
2021	94,000	151,000	245,000
2022	110,000	145,000	255,000
2023	126,000	142,000	268,000
2024	139,000	136,000	275,000
2025	152,000	129,000	281,000
2026	165,000	122,000	287,000

Uniform Retirement System of Justices & Judges

Following is a summary of the major System provisions used to determine the System's financial position as of July 1, 2016.

Effective date and authority

The System became effective January 13, 1969.

The System is provided for under Sections 1101-1111 of Title 20 of the Oklahoma Statutes.

Administration

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

Employees included

All justices and judges of the Supreme Court, Court of Criminal Appeals, Workers Compensation Court, Court of Appeals or District Court who serve in the State of Oklahoma participate in the Uniform Retirement System for Justices and Judges.

Member contributions

Before September 1, 2005, basic member contributions equal 5% of salary, while married members could have elected an 8% contribution rate in order to provide survivor coverage. After September 1, 2005, the member contribution rate for all members is 8% of salary.

Employer contributions

Before July 1, 1997, the fund received an amount equal to 10% of the Court Fund receipts. After July 1, 1997, employer contributions were based on members' salaries and a yearly schedule and, effective January 1 2001, were changed to 2.0% of the member's salary. Effective for the fiscal years ending June 30, 2006, employer contributions increased to 3.0% of the member's salary and will increase annually up to 22.0% for fiscal years ending June 30, 2019, and thereafter.

Service considered

Any justice or judge who becomes a member of the System when first eligible will receive credit for all years of service with the Supreme Court, Court of Criminal Appeals, Workers' Compensation Court, Court of Appeals, or a District Court of the State of Oklahoma.

Uniform Retirement System of Justices & Judges

Compensation considered	Salary received by the justice or judge while serving in the referenced courts.
Final average salary	The average monthly salary received during the thirty-six (36) highest months of active service as a justice or judge.
Eligibility for benefits	A justice or judge must complete eight (8) years of service to be eligible for any benefit from the System. A member who leaves the System, for any reason, prior to the completion of eight (8) years of service is entitled only to a return of his/her accumulated contributions without interest.
Normal retirement date	A member who completes eight (8) years of service and attains age sixty-five (65), or completes ten (10) years of service and attains age sixty (60), or completes eight (8) years of service and whose sum of years of service and age equals or exceeds eighty (80), may begin receiving retirement benefits at his/her request. For judges taking office after January 1, 2012, retirement age is sixty-seven (67) with eight (8) years of service or age sixty-two (62) with ten (10) years of service.
Normal retirement benefit	The benefit, payable monthly for the life of the member, is equal to 4% of average monthly salary multiplied by the number of years in service. In no event, however, will the benefit exceed 100% of final average salary.
Disability retirement	A member who completes fifteen (15) years of service, attains age fifty-five (55), and is ordered to retire by reason of disability is eligible for disability retirement benefits. The benefit, payable for life, is calculated in the same manner as a normal retirement benefit.
Survivor coverage	The spouse of a deceased active member who had met normal or vested retirement provisions may elect a spouse's benefit. The spouse's benefit is the benefit that would have been paid if the member had retired and elected the reduced benefit with the joint and 100% survivor option (Option B), or a 50% unreduced benefit for certain married participants making 8% of pay contributions prior to September 1, 2005. Spouses of members who made the voluntary contributions prior to July 1, 1999 and die or retire after July 1, 1999 may receive up to 65% of the unreduced benefit. If the member has ten (10) years of service and the death is determined to be employment related, this benefit is payable immediately to the spouse. Otherwise, the benefit is payable to the spouse on the date the deceased member

Uniform Retirement System of Justices & Judges

Survivor coverage (cont.)

would have been eligible. This benefit is payable only to the surviving spouse of a member and they must be married ninety (90) days prior to the member's termination of employment as a justice or judge.

Optional forms of retirement benefits

The Maximum Benefit is an unreduced single-life annuity with a guaranteed refund of the contribution accumulation. Three (3) other types of benefit payments are available to retiring members:

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

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

Original Surviving Spouse Plan – An unreduced benefit with Joint and 50% Survivor annuity available only to members who made additional voluntary survivor benefit contributions of 3% of salary prior to September 1, 2005. Spouses of members who made the voluntary contributions prior to July 1, 1999 and die or retire after July 1, 1999 may receive up to 65% of the unreduced benefit.

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

Post-retirement death benefit

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

Minimum benefits

In no event will a member, or the estate of a member receive an amount or amounts less than the member's accumulated contributions without interest.

If a former member is not eligible for any other benefit from the System, the member will receive a transfer of these contributions. Similarly, if a member dies while having no spousal coverage, or upon the death of a spouse receiving survivor benefits, the member's beneficiary will receive the excess of the accumulated contributions over all benefits received by either the member, or the member and spouse combined.

Uniform Retirement System of Justices & Judges

Supplemental medical insurance	The System contributes the lesser of $105 per month or the Medicare Supplement Premium to the Office of Management and Enterprise Services, Employees Group Insurance Division for members receiving retirement benefits.
Expenses	The expenses of administering the System are paid from the retirement trust fund.

Uniform Retirement System of Justices & Judges

Entry Age Actuarial Cost Method

Liabilities and contributions shown in this report are computed using the Individual Entry Age Level Percent of Pay actuarial cost. Sometimes called the "funding method," this is a particular technique used by actuaries for establishing the amount of the annual actuarial cost of pension 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 or her 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 actuarial accrued liabilities attributable to deviations in experience from the actuarial assumptions, adjust the unfunded actuarial accrued liability.

Asset Valuation Method

The actuarial value of assets is based on a five-year moving average of expected and actual market values determined as follows:

- at the beginning of each fiscal 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 fiscal 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 fiscal year;

- the difference between the expected actuarial asset value and the market value is the investment gain or loss for the previous fiscal year;

- the (final) actuarial asset value is the preliminary value plus 20% of the investment gains and losses for each of the five (5) previous fiscal years, but in no case more than 120% of the market value or less than 80% of the market value.

Uniform Retirement System of Justices & Judges

Amortization Method

Effective July 1, 2008, the unfunded actuarial accrued liability is amortized as a level percent of payroll over a 20-year closed period commencing July 1, 2007. Given a stable active workforce, this amortization method is expected to produce a payment stream that is consistent as a percent of covered payroll.

Valuation Procedures

The actuarial accrued liability held for nonvested, inactive members who have a break in service, or for nonvested members who have quit or been terminated, even if a break in service has not occurred as of the valuation date, is equal to the amount of the individual's unclaimed contributions.

The wages used to project the benefits and liabilities are actual earnings for the year ending June 30, 2016 increased by the salary scale to develop expected earnings for the current valuation year. Earnings are annualized for members with less than twelve months of reported earnings.

The calculations for the required employer contribution are determined as of mid-year. This is a reasonable estimate since contributions are made on a monthly basis throughout the year.

We did not value the 415 limit for active participants. The impact was assumed to be *de minimus*.

The compensation limitation under IRC Section 401(a)(17) is considered in this valuation.

Liability is included for members who appear to be deferred vested, but who have not yet submitted certain paperwork and therefore are not in the vested data provided. An estimated benefit was provided by the System. A corrected benefit and status will be provided by the System when the actual benefit and status have been finalized.

Members who are contributing to the System, but have not yet filled out an enrollment application, are included as active members. Where data elements are missing, reasonable estimates are used. Age is based on average entry age for other members. Gender is assigned in proportion to the overall group.

Uniform Retirement System of Justices & Judges

Economic Assumptions

Investment Return: 7.25% net of investment expenses per annum, compounded annually

Salary Increases: 5.00% per year

Payroll Growth: 4.00% per year

Ad hoc benefit increase assumption:

Monthly benefits	No increases assumed
Medical supplement	No increases assumed

Projection of 401(a)(17) compensation limit: Projected with inflation at 3.00%

Demographic Assumptions

Retirement age:

Active members hired before 1/1/2012

Attained Age	Annual Rates of Retirement Per 100 Eligible Members
Below 62	10
62 – 65	20
66 – 67	10
68 – 74	30
75+	100

Active members hired after 1/1/2012

Attained Age	Annual Rates of Retirement Per 100 Eligible Members
Below 62	10
62 – 65	25
66	10
67 – 69	30
70	20
71 – 74	10
75+	100

Uniform Retirement System of Justices & Judges

Retirement age: (continued)	
Deferred vested members	Participants with deferred benefits are assumed to commence benefits on a date provided by the System. Actives expected to terminate with a vested benefit are assumed to commence benefits at age sixty (60).
Mortality Rates:	
Active participants and non-disabled pensioners	RP-2000 Combined Active/Retired Healthy Mortality Table projected to 2010 using Scale AA, setback one (1) year.
Disabled pensioners	RP-2000 Combined Active/Retired Healthy Mortality Table projected to 2010 using Scale AA set forward fourteen (14) years.
Separation Rates:	
Separation for all reasons other than death	2% for all years of service prior to retirement eligibility.
Disability Rates:	0% for all years
Marital Status:	
Age difference	Males are assumed to be four (4) years older than spouses.
Percentage married	85%
Other Assumptions:	
Provisions for expenses	Administrative expenses, as budgeted for the Oklahoma Uniform Retirement System for Justices and Judges.
Form of payment	Active members who were contributing 8% of pay as of August 31, 2005, are assumed to retire with an unreduced benefit payable as a 50% Joint and Survivor annuity. All other members are assumed to retire with a life-only annuity.
Age	For members who have not completed the application process and are missing a date of birth, we assume they are 50 years old as of the valuation date.
Service	For members who have not completed the application process and are missing an entry date, we assume they have half a year of service as of the valuation date.

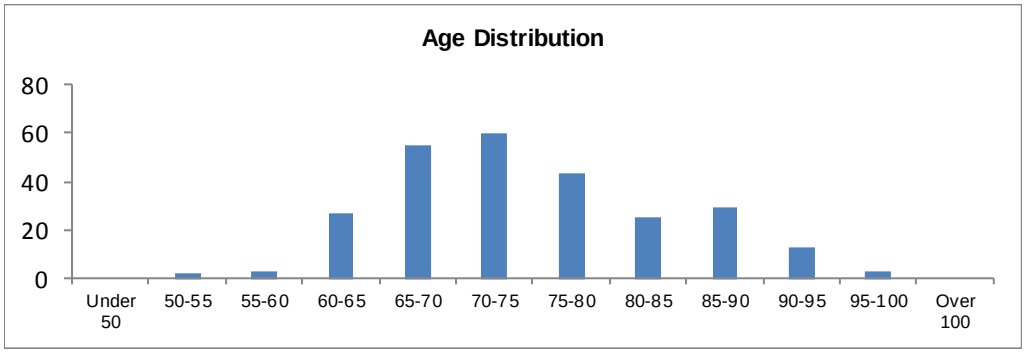
Uniform Retirement system for Justices and Judges
Valuation Data Distribution - Actives

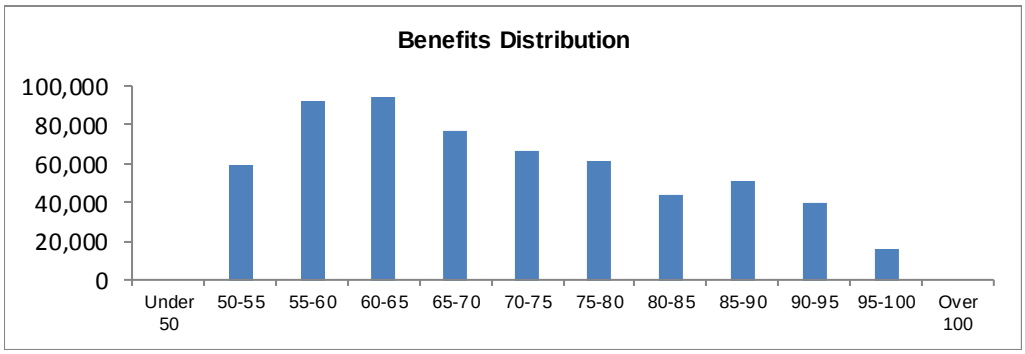
	Years of Service									
Age	**0 to 4**	**5 to 9**	**10 to 14**	**15 to 19**	**20 to 24**	**25 to 29**	**30 to 34**	**35 to 39**	**40 & Up**	**Total**
Under 35	1									1
Avg. Pay	$131,835									$131,835
35 to 39	6	3								9
Avg. Pay	$101,170	$118,183								$106,841
40 to 44	7	8	3	1						19
Avg. Pay	$106,008	$122,876	$111,524	$121,596						$114,801
45 to 49	3	6	3	1	1					14
Avg. Pay	$125,009	$116,475	$130,203	$121,596	$111,356					$121,246
50 to 54	18	21	11	4	1					55
Avg. Pay	$117,956	$119,157	$122,527	$121,596	$131,835					$119,846
55 to 59	18	16	8	6	7	2				57
Avg. Pay	$121,443	$123,515	$120,316	$121,596	$123,059	$138,301				$122,673
60 to 64	7	12	7	7	8	4	3	1		49
Avg. Pay	$115,745	$120,956	$124,585	$118,670	$129,695	$127,397	$129,330	$121,596		$122,882
65 to 69	4	7	9	11	7	2	5	2		47
Avg. Pay	$116,479	$120,133	$122,190	$124,191	$128,974	$124,898	$139,607	$145,589		$125,840
70 & up	1	3	6	3	2		2		1	18
Avg. Pay	$131,835	$118,183	$127,164	$125,009	$144,153		$140,989		$144,800	$129,971
Total	65	76	47	33	26	8	10	3	1	269
Avg. Pay	$116,509	$120,551	$122,772	$122,151	$128,203	$129,498	$136,801	$137,592	$144,800	$122,049

Uniform Retirement System For Justices & Judges

Retirees, Beneficiaries, & Disableds

Age	Number			Annual Benefits		
	Male	Female	Total	Male	Female	Total
Under 50	0	0	0	$ 0	$ 0	$ 0
50-55	0	2	2	0	119,475	119,475
55-60	3	0	3	277,111	0	277,111
60-65	20	7	27	2,021,139	524,078	2,545,217
65-70	43	12	55	3,441,852	766,095	4,207,947
70-75	43	17	60	3,064,998	947,762	4,012,760
75-80	33	10	43	2,198,188	435,140	2,633,328
80-85	11	14	25	679,763	425,981	1,105,744
85-90	13	16	29	855,886	630,273	1,486,159
90-95	7	6	13	382,993	138,769	521,762
95-100	1	2	3	28,260	18,426	46,686
Over 100	0	0	0	0	0	0
Total	174	86	260	$ 12,950,190	$ 4,005,999	$ 16,956,189





Uniform Retirement System For Justices & Judges

	Actuarial Valuation as of 7/1/2016	Actuarial Valuation as of 7/1/2015	% Change
1. Active members			
a. Number	269	271	(0.7%)
b. Annual compensation	$ 34,810,851	$ 34,537,376	0.8%
c. Average annual compensation	$ 129,408	$ 127,444	1.5%
d. Average age	58.1	57.2	1.6%
e. Average service	11.6	11.0	5.5%
2. Accumulated member contributions			
a. Active members	$ 25,199,268	$ 23,390,700	7.7%
b. Unclaimed contribution amounts	$ 268,848	$ 674,292	(60.1%)
c. Total	$ 25,468,116	$ 24,064,992	5.8%
3. Vested terminated members			
a. Number	17	18	(5.6%)
b. Annual deferred benefits	$ 562,130	$ 615,991	(8.7%)
c. Average annual deferred benefit	$ 33,066	$ 34,222	(3.4%)
d. Annual supplemental medical insurance premiums	$ 21,420	$ 22,680	(5.6%)
4. Retired members			
a. Number	190	195	(2.6%)
b. Annual retirement benefits	$ 14,329,533	$ 14,579,693	(1.7%)
c. Average annual retirement benefit	$ 75,419	$ 74,768	0.9%
d. Annual supplemental medical insurance premiums	$ 168,840	$ 170,100	(0.7%)
5. Beneficiaries			
a. Number	66	62	6.5%
b. Annual retirement benefits	$ 2,337,295	$ 2,163,257	8.0%
c. Average annual retirement benefit	$ 35,414	$ 34,891	1.5%
6. Disabled members			
a. Number	4	3	33.3%
b. Annual retirement benefits	$ 289,361	$ 215,782	34.1%
c. Average annual retirement benefit	$ 72,340	$ 71,927	0.6%
d. Annual supplemental medical insurance premiums	$ 3,780	$ 3,780	0.0%
7. Total members included in valuation	546	549	(0.5%)

Uniform Retirement System For Justices & Judges

			Receiving Benefits			
	Active Members	Vested Terminated	Retirees	Disability Retirees	Beneficiaries	Total Members
As of July 1, 2015	**271**	**18**	**195**	**3**	**62**	**549**
Age retirements	(4)	0	4	0	0	0
Disability retirements	(1)	0	0	1	0	0
Deaths without payments continuing	0	0	(4)	0	(1)	(5)
Deaths with payments continuing	0	0	(5)	0	5	0
Nonvested terminations/refund of contributions	(4)	0	0	0	0	(4)
Vested terminations	0	0	0	0	0	0
Transfers	0	0	0	0	0	0
Data adjustments	0	0	0	0	0	0
Rehires	1	(1)	0	0	0	0
New entrants during the year	6	0	0	0	0	6
Net change	(2)	(1)	(5)	1	4	(3)
As of July 1, 2016	**269**	**17**	**190**	**4**	**66**	**546**

	Active	Retired	Vested Terminated	Total
Records submitted on data file	295	453	11	759
Remove deceased retirees	0	(193)	0	(193)
Remove terminated employees	(26)	0	0	(26)
Add assumed vesteds	0	0	6	6
Data errors	0	0	0	0
Total valued	**269**	**260**	**17**	**546**

Uniform Retirement System of Justices & Judges

Accrued Benefit

The amount of an individual's benefit (whether or not vested) as of a specific date, determined in accordance with the terms of a pension plan and based on compensation and service to that date.

Actuarial Accrued Liability

That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of pension plan benefits and expenses which is not provided for by future Normal Costs.

Actuarial Assumptions

Assumptions as to the occurrence of future events affecting pension costs, such as: mortality, withdrawal, disablement, and retirement; changes in compensation, rates of investment earnings, and asset appreciation or depreciation; procedures used to determine the Actuarial Value of Assets; and other relevant items.

Actuarial Cost Method

A procedure for determining the Actuarial Present Value of pension plan benefits and expenses and for developing an actuarially equivalent allocation of such value to time periods, usually in the form of a Normal Cost and an Actuarial Accrued Liability.

Actuarial Gain (Loss)

A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions during the period between two (2) Actuarial Valuation dates, as determined in accordance with a particular Actuarial Cost Method.

Actuarial Present Value

The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions.

Actuarial Valuation

The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a pension plan.

Actuarial Value of Assets

The value of cash, investments and other property belonging to a pension plan, as used by the actuary for the purpose of an Actuarial Valuation.

Actuarially Equivalent

Of equal Actuarial Present Value, determined as of a given date with each value based on the same set of Actuarial Assumptions.

Amortization Payment

That portion of the pension plan contribution which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Deferred Vested Participant

A vested member who has terminated employment prior to early or normal retirement age who does not withdraw his or her contributions and is, therefore, due a retirement benefit at a later date.

Entry Age Actuarial Cost Method

A method under which the Actuarial Present Value of the Projected Benefits of each individual included in an Actuarial Valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this Actuarial Present Value allocated to a valuation year is called the Normal Cost. The portion of this Actuarial Present Value not provided for at a valuation date by the Actuarial Present Value of future Normal Costs is called the Actuarial Accrued Liability.

Market Value of Assets

The fair value of cash, investments and other property belonging to a pension plan that could be acquired by exchanging them on the open market.

Normal Cost

That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method Projected Benefits

Projected Benefits

Those pension plan benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits.

Unaccrued Benefit

The excess of an individual's Projected Benefits over the Accrued Benefits as of a specified date.

Unfunded Actuarial Accrued Liability

The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets.

Withdrawal Liability

The liability due to an active member terminating employment with a deferred vested benefit.