

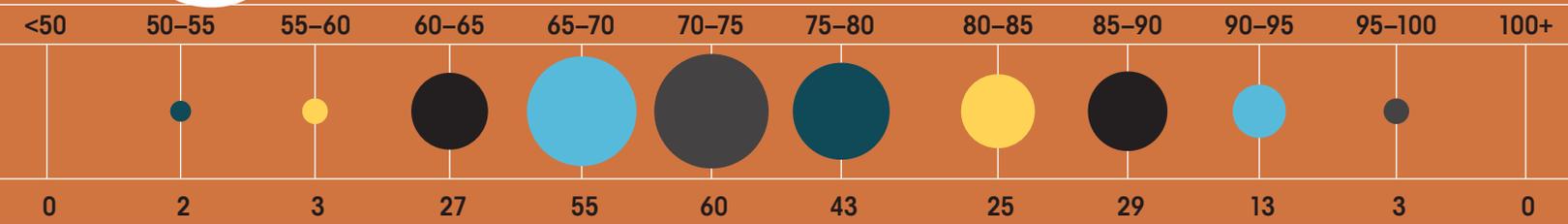
TOTAL
 RETIRED MEMBERS
260

ACTUARIAL

6

U R S J J

RETIRED MEMBERS PER AGE GROUP



AVERAGE ANNUAL BENEFIT 2006-2016



| | |
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November 4, 2016

Board of Trustees
Oklahoma Public Employees Retirement System
5801 N. Broadway Extension, Suite 400
P.O. Box 53007
Oklahoma City, OK 73152-3007

Members of the Board:

We have completed an actuarial valuation of the Oklahoma Uniform Retirement System for Justices and Judges as of July 1, 2016 for the purpose of determining the actuarial contribution rate and calculating and analyzing key financial measurements. Actuarial valuations are performed annually. This valuation reflects the benefit provisions and contribution rates in effect as of July 1, 2016.

In preparing the valuation, we, as the actuary, relied on the data provided by the System. As part of our work, we performed a limited review of the data for consistency and reasonableness and did not find material defects in the data.

All of the information and supporting schedules in the Actuarial Section have been provided by Cavanaugh Macdonald Consulting, LLC. We also prepared the *Schedule of Changes in the Net Pension Liability* and *Schedule of Employer Contributions* 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 prior actuarial firm.

The assumptions recommended by the actuary and adopted by the Board are, in the aggregate, reasonably related to the experience under the System and to reasonable expectations of anticipated experience under the System and meet the parameters for the disclosures under statements issued by the Governmental Accounting Standards Board.

Future actuarial results may differ significantly from the current results presented in this report due to such factors 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. Since 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.

The actuary prepared the following supporting schedules for the Comprehensive Annual Financial Report:

Actuarial Section

- Summary of Results
- Analysis of Financial Experience
- Solvency Test
- Summary of Membership Data

This is to certify that the independent consulting actuaries, Alisa Bennett and Brent Banister, are Members of the American Academy of Actuaries and meet the qualification standards of the American Academy of Actuaries to render the actuarial opinion contained herein. They have experience in performing valuations for public retirement systems. The valuation was prepared in accordance with Actuarial Standards of Practice issued by the Actuarial Standards Board. 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.

Respectfully submitted,



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



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

Summary of 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 Required Contribution Rate | 18.52% | 18.01% | |
| Less Member Contribution Rate | 8.00% | 8.00% | |
| Employer Actuarial Required Contribution Rate | 10.52% | 10.01% | |
| Less Statutory State Employer contribution Rate | 19.00% | 17.50% | |
| Contribution Shortfall/(Surplus) | (8.48%) | (7.49%) | |

Analysis of Financial Experience

Gains & Losses in Actuarial Accrued Liability During the Year Ended June 30, 2016 Resulting from Differences Between Assumed Experience & Actual Experience

| Type of Activity | (Gain) or Loss for Year End 2016 |
|---|-------------------------------------|
| 1. Age & Service Retirements. If members retire at older ages or with smaller benefits than assumed, there is a gain. If they retire at younger ages or have higher average pays, a loss occurs. | \$ (2,101,000) |
| 2. Disability Retirements. If disability claims are less than assumed, then there is a gain. If more claims, a loss. | \$ 87,000 |
| 3. Death Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss. | 259,000 |
| 4. Withdrawal from Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss. | (339,000) |
| 5. Pay Increases. If there are smaller pay increase than assumed, there is a gain. If greater increases, a loss. | (4,181,000) |
| 6. New Entrants. All new entrants to the System create a loss. | 164,000 |
| 7. Other. Miscellaneous gains and losses resulting from data adjustments, employee transfers, valuation methods, etc. | (1,369,000) |
| 8. (Gain) or Loss During Year From Financial Experience. | <u>1,908,000</u> |
| 9. Composite (Gain) or Loss During Year. | <u>\$ (5,572,000)</u> |

Solvency Test

The Judges funding objective is to be able to pay long-term benefit promises through contributions that remain approximately level from year to year as a percent of salaries earned by members. In this way, members and employers in each year pay their fair share for retirement service accrued in that year by System members.

If the retirement system follows level contribution rate financing principles, the system will pay all promised benefits when due – the ultimate test of financial soundness.

A short-term solvency test is one means of checking the funding progress. In a short-term solvency test, the retirement System’s present valuation assets are compared with: 1) active member contributions on deposit, 2) the liabilities for future benefits to persons who have retired and the liabilities for terminated employees with vested benefits, and 3) the liabilities for service already rendered by active members. In a system that has been following the discipline of level contribution rate financing, the liabilities for member contributions on deposit (liability 1), the liabilities for future benefits to present retirees and the liabilities for future benefits for terminated employees (liability 2) will be fully covered by present assets, except in rare circumstances.

In addition, the liabilities for service already rendered by members (liability 3) will be partially covered by the remainder of present assets. Generally, if the system has been using level contribution rate financing, the funded portion of liability 3 will increase over time; however, a decrease generally occurs in those years when substantial benefit improvements are granted by the Legislature. It is unusual for liability 3 to be fully funded. The funded ratio of the System based on total actuarial accrued liabilities (1 + 2 + 3) provides an indication of how well the System is funded.

The schedule below illustrates the progress of funding the actuarial accrued liabilities.

| Date | Actuarial Accrued Liabilities ¹ and Valuation Assets | | | | | Portion of Actuarial Accrued Liabilities Covered by Reported Assets | | | |
|--------------|---|---|---|-----------------------------|------------------------------|---|------|-------|---|
| | Active Member Contributions (Liability 1) | Retirees, Beneficiaries and Terminated Vested Members (Liability 2) | Employer Financed Portion of Active Members (Liability 3) | Total Liability (1 + 2 + 3) | Reported Assets ¹ | (1) | (2) | (3) | Funded Ratio of Total Accrued Actuarial Liabilities |
| July 1, 2007 | \$17,218,458 | \$104,441,388 | \$105,402,347 | \$227,062,193 | \$224,577,704 | 100% | 100% | 97.6% | 98.9% |
| July 1, 2008 | 19,206,749 | 108,823,528 | 116,032,044 | 244,062,321 | 235,297,077 | 100 | 100 | 96.2 | 96.4 |
| July 1, 2009 | 20,120,183 | 119,470,132 | 121,805,707 | 261,396,022 | 221,576,179 | 100 | 100 | 67.3 | 84.8 |
| July 1, 2010 | 20,768,871 | 138,619,902 | 123,376,632 | 282,765,405 | 230,010,299 | 100 | 100 | 57.2 | 81.3 |
| July 1, 2011 | 20,060,127 | 134,336,252 | 92,395,853 | 246,792,232 | 237,626,663 | 100 | 100 | 90.1 | 96.3 |
| July 1, 2012 | 21,278,738 | 137,448,040 | 90,652,122 | 249,378,900 | 238,553,638 | 100 | 100 | 88.1 | 95.7 |
| July 1, 2013 | 23,130,164 | 136,834,202 | 94,444,597 | 254,408,963 | 247,531,035 | 100 | 100 | 92.7 | 97.3 |
| July 1, 2014 | 24,434,587 | 140,084,348 | 94,268,742 | 258,787,677 | 274,070,696 | 100 | 100 | 100.0 | 105.9 |
| July 1, 2015 | 23,390,700 | 158,199,138 | 84,810,188 | 266,400,026 | 295,355,061 | 100 | 100 | 100.0 | 110.9 |
| July 1, 2016 | 25,199,268 | 159,092,241 | 92,142,032 | 276,433,541 | 306,256,213 | 100 | 100 | 100.0 | 110.8 |

¹ Actuarial value of assets based on the smoothing technique adopted by the Board.

Schedule of Active Member Valuation Data

| Valuation Date | Number | Annual Payroll | Annual Average Pay | % Increase in Average Pay |
|----------------|--------|----------------|--------------------|---------------------------|
| July 1, 2016 | 269 | \$34,810,851 | \$129,408 | 1.54% |
| July 1, 2015 | 271 | 34,537,376 | 127,444 | 1.86 |
| July 1, 2014 | 274 | 34,281,695 | 125,116 | (0.49) |
| July 1, 2013 | 273 | 34,325,368 | 125,734 | 0.33 |
| July 1, 2012 | 266 | 33,336,632 | 125,326 | (2.13) |
| July 1, 2011 | 271 | 34,700,819 | 128,047 | (0.92) |
| July 1, 2010 | 271 | 35,023,262 | 129,237 | 5.45 |
| July 1, 2009 | 274 | 33,579,668 | 122,554 | 4.81 |
| July 1, 2008 | 277 | 32,389,296 | 116,929 | 0.98 |
| July 1, 2007 | 278 | 32,191,938 | 115,798 | 14.58 |

Schedule of Retirants, Disabled Retirants, and Beneficiaries Added to and Removed from Rolls

| Year Ended | Added to Rolls | | Removed from Rolls | | Rolls – End of Year | | % Increase in Annual Allowances | Average Annual Allowances |
|---------------|----------------|-------------------|--------------------|-------------------|---------------------|-------------------|---------------------------------|---------------------------|
| | No. | Annual Allowances | No. | Annual Allowances | No. | Annual Allowances | | |
| June 30, 2016 | 5 | \$409,553 | 5 | \$412,096 | 260 | \$16,956,189 | (0.01)% | \$65,216 |
| June 30, 2015 | 30 | 2,395,473 | 5 | 298,613 | 260 | 16,958,732 | 14.11 | 65,226 |
| June 30, 2014 | 19 | 1,330,374 | 14 | 838,912 | 235 | 14,861,872 | 3.42 | 63,242 |
| June 30, 2013 | 7 | 439,982 | 10 | 576,225 | 230 | 14,370,410 | (0.94) | 62,480 |
| June 30, 2012 | 7 | 550,850 | 9 | 188,030 | 233 | 14,506,653 | 2.57 | 62,260 |
| June 30, 2011 | 28 | 2,415,131 | 3 | 73,279 | 235 | 14,143,833 | 19.84 | 60,187 |
| June 30, 2010 | 17 | 1,533,568 | 7 | 277,053 | 210 | 11,801,981 | 11.92 | 56,200 |
| June 30, 2009 | 11 | 877,758 | 6 | 267,360 | 200 | 10,545,466 | 6.09 | 52,727 |
| June 30, 2008 | 7 | 459,236 | 6 | 205,594 | 195 | 9,940,068 | 5.62 | 50,975 |
| June 30, 2007 | 19 | 1,278,139 | 5 | 193,466 | 194 | 9,410,934 | 12.50 | 48,510 |

Summary of System Provisions (continued)

Summary of System Provisions

| | |
|-----------------------------------|---|
| <i>Employees Included:</i> | All Justices and Judges of the Supreme Court, Court of Criminal Appeals, Workers Compensation Court, Courts of Appeals or District Court who serve in the State of Oklahoma participate in the Uniform Retirement System for Justices and Judges. |
| <i>System Contributions:</i> | The contributions are received from the employer agencies based on a percentage of salary of covered members. Effective for the fiscal year ending June 30, 2006, employer contributions increased to 3.0% of the member's salary and will increase annually up to 22.0% of member payroll for fiscal years ending June 30, 2019, and thereafter. |
| <i>Member Contributions:</i> | 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. |
| <i>Final Average Salary:</i> | The average monthly salary received during the highest three (3) years of active service as a Justice or Judge in a court of record. |
| <i>Retirement Date:</i> | 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 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. |
| <i>Normal Retirement Benefit:</i> | General formula is 4% of average monthly salary multiplied by service, up to a maximum benefit of 100% of final average salary. |
| <i>Disability Benefit:</i> | After fifteen (15) years of service and age fifty-five (55), provided the member is ordered to retire by reason of disability and is eligible for disability retirement benefits. This benefit, payable for life, is calculated in the same manner as a normal retirement benefit but cannot exceed 100% of final average salary. |

Summary of System Provisions (continued)

Survivor Benefit:

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 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. 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. In order to be eligible for this survivor coverage, members must be married to their spouse for three (3) years preceding death and they must be married ninety (90) days prior to the member's termination of employment as a Justice or Judge. Effective October 1, 2004, the benefit for surviving spouses may be higher than 50% of the member's benefit, up to 65% for certain members who made additional voluntary survivor benefit contributions of 3% of salary prior to July 1, 1999, and who die or retire after July 1, 1999.

Optional Forms of Retirement Benefits:

The normal form of benefit for a single member is a single life monthly annuity with a guaranteed refund of the contribution accumulation. The normal form for a married member is a 50% joint and survivor annuity benefit. Optional forms of payment with actuarial reduction (if applicable) are available to all members retiring under the normal retirement or vested retirement provisions. After September 1, 2005, the options providing post-retirement death benefits are:

Option A -- Joint and 50% survivor annuity with a return to the unreduced amount if the joint annuitant dies.

Option B -- Joint and 100% survivor annuity with a return to the unreduced amount if the joint annuitant dies.

For married members, spousal consent is required for any option other than Option A.

Participant Death Benefit:

\$5,000 lump sum.

Supplemental Medical Insurance Premium:

The System contributes the lesser of \$105 per month or the Medicare Supplement Premium to the Oklahoma State and Education Employee's Group Health Insurance Program for members receiving retirement benefits.

Summary of Actuarial Assumptions and Methods

1. The investment return rate used in the valuation was 7.25 percent per year, net of investment expenses, compounded annually. This rate of return is not the assumed real rate of return. The real rate of return is the rate of return in excess of the inflation rate. Considering other financial assumptions, the 7.25 percent investment return rate translates to an assumed real rate of return of 4.25 percent.
2. The RP-2000 Mortality Table projected to 2010 using Scale AA for males and females with a one-year age setback is used for preretirement and postretirement mortality.
3. The probability of withdrawal from service is 2% for all years of service. The individual pay increase assumption is 5.00% per year.
4. The probabilities of retirement are shown in Schedule 1.
5. Because of the passage of House Bill 2132, benefits are not assumed to increase due to future ad hoc cost-of-living increases.
6. The individual entry-age normal actuarial cost method of valuation was used in determining actuarial accrued liability and normal cost. Actuarial gains and losses reduce or increase the unfunded actuarial accrued liability and are amortized over the remaining amortization period (11 years as of July 1, 2016).
7. The actuarial value of assets is based on a five-year moving average of expected actuarial values and market values. A preliminary expected value is determined equal to the prior year's actuarial value of assets plus net cash flow for the year ending on the valuation date, assuming the valuation investment return. The expected actuarial asset value is equal to the preliminary expected actuarial value plus the unrecognized investment gains and losses as of the beginning of the previous fiscal year. Twenty percent (20%) of the gain/loss as measured by the difference between the expected actuarial value and the market value at the valuation date is added to the preliminary expected actuarial value plus twenty percent (20%) of the unrecognized gains or losses for the four preceding fiscal years. The final result is constrained to a value no less than 80% and no more than 120% of the market value at the valuation date.
8. The actuarial assumptions and methods used in the valuation were adopted by the Board on based on System experience from July 1, 2010 through June 30, 2013.

Summary of Actuarial Assumptions and Methods (continued)

Schedule 1

Percent of Eligible Active Members Retiring Within Next Year

Active members hired before 1/1/2012

| Retirement | | Retirement | |
|------------|---------|------------|---------|
| Ages | Percent | Ages | Percent |
| Below 62 | 10% | 69 | 30% |
| 62 | 20% | 70 | 30% |
| 63 | 20% | 71 | 30% |
| 64 | 20% | 72 | 30% |
| 65 | 20% | 73 | 30% |
| 66 | 10% | 74 | 30% |
| 67 | 10% | 75 | 100% |
| 68 | 30% | | |

Active members hired after 1/1/2012

| Retirement | | Retirement | |
|------------|---------|------------|---------|
| Ages | Percent | Ages | Percent |
| Below 62 | 10% | 69 | 30% |
| 62 | 25% | 70 | 20% |
| 63 | 25% | 71 | 10% |
| 64 | 25% | 72 | 10% |
| 65 | 25% | 73 | 10% |
| 66 | 10% | 74 | 10% |
| 67 | 30% | 75 | 100% |
| 68 | 30% | | |