

EMPLOYEES RETIREMENT SYSTEM OF TEXAS
AUGUST 31, 2014 ACTUARIAL VALUATION
UPDATED AS OF FEBRUARY 28, 2015

March 18, 2015

Ms. Ann Bishop
Executive Director
Employees Retirement System of Texas
200 E. 18th Street
Austin, TX 78701

Re: Update Actuarial Valuation as of February 28, 2015

Dear Ms. Bishop:

We certify that the information contained in this report is accurate and fairly presents the actuarial position of the Employees Retirement System of Texas (ERS) as of February 28, 2015. This valuation is based on an update to the August 31, 2014 valuation, reflecting the impact of investment, salary, and payroll experience on the funded position of ERS through February 28, 2015, in accordance with the General Appropriations Act of the 84th Legislature.

Updated Actuarial Valuation

The updated valuation was primarily based upon information as of August 31, 2014, furnished by ERS staff, concerning system benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries.

For purposes of the updated actuarial valuation, ERS provided the following information which was used to update the information originally provided for the August 31, 2014 actuarial valuation:

- Assets as of February 28, 2015
- Reconciliation of Assets from August 31, 2014 through February 28, 2015
- Covered Payroll of Active Membership from August 31, 2014 through February 28, 2015
- Headcount and contribution balances for contributing members as of February 28, 2015
- Headcount and contribution balances for non-contributing members as of February 28, 2015

Table 1 of this report summarizes the results of the updated actuarial valuation as of February 28, 2015, Table 2 summarizes the changes in plan assets from August 31, 2014 through February 28, 2015, and Table 3 shows the development of the actuarial value of assets as of February 28, 2015.

Unless otherwise noted, this updated actuarial valuation was based on the same assumptions, methods and plan provisions as the August 31, 2014 actuarial valuation. A complete description of these items can be found in the August 31, 2014 Actuarial Valuation Report.

Funding Adequacy

The funding objective of ERS is to fund the sum of the normal cost and the amount necessary to amortize any unfunded actuarial accrued liability over a period that does not exceed 30 years by one or more years. Contribution rates should be established which, over time, will remain level as a percent of payroll.

The member contribution rates are established by State statute and the State contribution rate is set by State statute and legislative appropriation. For the fiscal year beginning September 1, 2015, members contribute 7.20% of payroll and the State and employers are expected to contribute a combined 8.00% of payroll (7.50% State, 0.50% employer) for each year in the future based on guidance from the Legislative Budget Board on future biennia. The member contribution rates are scheduled to increase to an ultimate rate of 7.50% of payroll in the 2017 fiscal year. These ultimate rates are subject to future legislative appropriations.

The unfunded actuarial accrued liability (UAAL) of ERS increased from \$7.5 billion as of August 31, 2014 to \$7.8 billion as of February 28, 2015. Additionally, the funded ratio of ERS—actuarial value of assets divided by the actuarial accrued liability—decreased from 77.2% as of August 31, 2014 to 76.9% as of February 28, 2015.

The updated valuation shows that the total normal cost for funding purposes is 11.58% of payroll. The total contribution rate is 15.20% of payroll for the 2016 fiscal year, and potentially increasing to 15.50% of payroll for all future fiscal years. The total contribution rate for the 2016 fiscal year exceeds the normal cost by 3.62% of payroll, but it is not sufficient to amortize the UAAL over a finite period of time. As a result, the UAAL is expected to grow indefinitely and the funding objective is not currently being realized.

The results of this updated valuation continue to indicate that the currently scheduled member, employer and State contributions are not expected to accumulate sufficient assets in order to pay all of the currently scheduled benefits when due.

Section 811.006 of the Texas Government Code limits the modifications to ERS that would, essentially, increase benefits or lower contributions to the trust unless the current level of benefits and contributions are considered actuarially sound. Section 811.006 defines actuarially sound as a retirement system that is receiving a total contribution rate sufficient to cover the normal cost, administrative expenses, and amortize the UAAL over a period of 31 years, or less. Based on the updated actuarial valuation as of February 28, 2015, the actuarially sound contribution (ASC) rate for ERS for the 2016 fiscal year is 19.11% of payroll.

Certification

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of, where applicable, the Internal Revenue Code and ERISA.

The signing actuaries are independent of the plan sponsor. They are all Enrolled Actuaries, Fellows of the Society of Actuaries, and Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries. Finally, each of the undersigned are experienced in performing valuations for large public retirement systems.

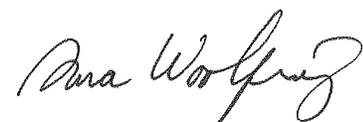
Respectfully submitted,
Gabriel, Roeder, Smith & Company



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



Joseph P. Newton, FSA, EA, MAAA
Senior Consultant



Dana Woolfrey, FSA, EA, MAAA
Consultant

SUMMARY OF VALUATION RESULTS

| | <u>February 28, 2015</u> | <u>August 31, 2014</u> |
|--|--------------------------|-------------------------|
| 1. Valuation Payroll | \$ 6,233,762,004 | \$ 6,171,443,191 |
| 2. Normal Cost Rate (incl Admin Expenses) | 11.58% | 11.58% |
| <u>Actuarial Information on Actuarial Value of Assets (smoothed)</u> | | |
| 3. Actuarial Accrued Liability (AAL) | \$ 33,532,186,975 | \$ 32,924,737,211 |
| 4. Actuarial Value of Assets | <u>25,780,749,477</u> | <u>25,431,922,496</u> |
| 5. Unfunded AAL (3 - 4) | \$ 7,751,437,498 | \$ 7,492,814,715 |
| 6. Funded Ratio (4 / 3) | 76.9% | 77.2% |
| | <u>2016 Fiscal Year</u> | <u>2015 Fiscal Year</u> |
| 7. Amortization of UAAL Over 31 Years as a Level Percentage of Payroll | 7.53% | 7.18% |
| 8. Contribution Rate Needed to Fund Normal Cost Plus Amortize the UAAL Over 31 Years based on Actuarial Value of Assets (2 + 7) | 19.11% | 18.76% |
| 9. Allocation of Contribution Rate | | |
| a. State and Employer rates | 8.00% | 8.00% |
| b. Member rate | <u>7.20%</u> | <u>6.90%</u> |
| c. Total contribution rate (9a + 9b) | 15.20% | 14.90% |
| d. Total normal cost rate (Item 2) | 11.58% | 11.58% |
| e. Available contribution rate to amortize UAAL (9c - 9d) | <u>3.62%</u> | <u>3.32%</u> |
| f. Total contribution rate (9d + 9e) | 15.20% | 14.90% |
| 10. Funding period based on statutory contribution rates (years) | Never | Never |
| <u>Actuarial Information on Market Value of Assets</u> | | |
| 11. Market Value of Assets | \$ 24,880,067,721 | \$ 25,050,116,469 |
| 12. Unfunded AAL (3 - 11) | 8,652,119,254 | 7,874,620,742 |
| 13. Funded Ratio (11 / 3) | 74.2% | 76.1% |
| 14. Funding period based on statutory contribution rates (years) | Never | Never |
| 15. Contribution Rate Needed to Fund Normal Cost Plus Amortize the UAAL Over 31 Years based on Market Value of Assets | 19.87% | 19.12% |

RECONCILIATION OF PLAN NET ASSETS

| | Six Month Period Ending February 28, 2015 <u>(1)</u> | Twelve Month Period Ending August 31, 2014 <u>(2)</u> |
|--|---|--|
| 1. Market value of assets at beginning of period | \$ 25,050,116,469 | \$ 22,868,542,011 |
| 2. Revenue for the period | | |
| a. Contributions for the period | | |
| i. State (including membership fees) | \$ 248,880,156 | \$ 482,239,018 |
| ii. Member (including penalty interest) | 225,876,608 | 430,594,897 |
| iii. Total | <u>\$ 474,756,764</u> | <u>\$ 912,833,915</u> |
| b. Net investment income | \$ 387,180,828 | \$ 3,252,416,986 |
| c. Total revenue | \$ 861,937,592 | \$ 4,165,250,901 |
| 3. Disbursements for the period | | |
| a. Benefit payments and refunds | 1,048,228,430 | 2,026,204,989 |
| b. Net transfers from TRS | (29,994,311) | (62,723,534) |
| c. Administrative expenses | 13,752,221 | 20,194,988 |
| d. Total expenditures | <u>1,031,986,340</u> | <u>1,983,676,443</u> |
| 4. Increase in net assets (Item 2c - Item 3d) | \$ (170,048,748) | \$ 2,181,574,458 |
| 5. Market value of assets at end of period (Item 1 + Item 4) | \$ 24,880,067,721 | \$ 25,050,116,469 |
| 6. Estimated rate of return for the period | 1.6% | 14.7% |

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

| | <u>Six Month Period Ending February 28, 2015</u> | <u>Twelve Month Period Ending August 31, 2014</u> |
|---|--|---|
| | (1) | (2) |
| 1. Actuarial value of assets at beginning of period | \$ 25,431,922,496 | \$ 24,667,639,104 |
| 2. Net new investments | | |
| a. Contributions for the period | \$ 474,756,764 | \$ 912,833,915 |
| b. Disbursements for the period | <u>(1,031,986,340)</u> | <u>(1,983,676,443)</u> |
| c. Subtotal | (557,229,576) | (1,070,842,528) |
| 3. Assumed investment return rate | 4.00% | 8.00% |
| 4. Expected return | \$ 1,006,132,308 | \$ 1,930,577,427 |
| 5. Expected actuarial value of assets at end of period (Item 1 + Item 2c + Item 4) | \$ 25,880,825,228 | \$ 25,527,374,003 |
| 6. Market value of assets at end of period | \$ 24,880,067,721 | \$ 25,050,116,469 |
| 7. Excess earnings/(shortfall) (Item 6 - Item 5) | \$ (1,000,757,507) | \$ (477,257,534) |
| 8. Excess earnings/(shortfall) recognized* | \$ (100,075,751) | \$ (95,451,507) |
| 9. Actuarial value of assets (Item 5 + Item 8) | \$ 25,780,749,477 | \$ 25,431,922,496 |
| 10. Estimated rate of return for the period | 3.6% | 7.6% |
| 11. Actuarial value as percentage of market value | 103.6% | 101.5% |

* 10% was recognized for the six month period ending February 28, 2015 and 20% was recognized for the twelve month period ending August 31, 2014.

**LAW ENFORCEMENT AND CUSTODIAL OFFICER
SUPPLEMENTAL RETIREMENT FUND OF THE
EMPLOYEES RETIREMENT SYSTEM OF TEXAS
AUGUST 31, 2014 ACTUARIAL VALUATION
UPDATED AS OF FEBRUARY 28, 2015**

March 23, 2015

Ms. Ann Bishop
Executive Director
Employees Retirement System of Texas
200 E. 18th Street
Austin, TX 78701

Re: Update Actuarial Valuation as of February 28, 2015

Dear Ms. Bishop:

We certify that the information contained in this report is accurate and fairly presents the actuarial position of the Law Enforcement and Custodial Officer Supplemental Retirement Fund (LECOSRF) of the Employees Retirement System of Texas (ERS) as of February 28, 2015. This valuation is based on an update to the August 31, 2014 valuation, reflecting the impact of investment, salary, and payroll experience on the funded position of LECOSRF through February 28, 2015, in accordance with the General Appropriations Act of the 84th Legislature.

Updated Actuarial Valuation

The updated valuation was primarily based upon information as of August 31, 2014, furnished by ERS staff, concerning system benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries.

For purposes of the updated actuarial valuation, ERS provided the following information which was used to update the information originally provided for the August 31, 2014 actuarial valuation:

- Assets as of February 28, 2015
- Reconciliation of Assets from August 31, 2014 through February 28, 2015
- Covered Payroll of Active Membership from August 31, 2014 through February 28, 2015
- Headcount and contribution balances for contributing members as of February 28, 2015
- Headcount and contribution balances for non-contributing members as of February 28, 2015

Table 1 of this report summarizes the results of the updated actuarial valuation as of February 28, 2015, Table 2 summarizes the changes in plan assets from August 31, 2014 through February 28, 2015, and Table 3 shows the development of the actuarial value of assets as of February 28, 2015.

Unless otherwise noted, this updated actuarial valuation was based on the same assumptions, methods and plan provisions as the August 31, 2014 actuarial valuation. A complete description of these items can be found in the August 31, 2014 Actuarial Valuation Report.

Funding Adequacy

The funding objective of LECOSRF is to fund the sum of the normal cost and the amount necessary to amortize any unfunded actuarial accrued liability over a period that does not exceed 30 years by one or more years. Contribution rates should be established which, over time, will remain level as a percent of payroll.

The member contribution rates are established by State statute and the State contribution rate is set by State statute and legislative appropriation. For the fiscal year beginning September 1, 2015, members contribute 0.50% of payroll and the State contributes 0.50% of payroll. LECOSRF also receives a portion of the court costs collected under Section 133.102 of the Local Government Code. Based on historical information, the contribution from this source is expected to be approximately 1.20% of payroll.

The unfunded actuarial accrued liability (UAAL) of LECOSRF increased from \$323 million as of August 31, 2014 to \$335 million as of February 28, 2015. Additionally, the funded ratio of LECOSRF—actuarial value of assets divided by the actuarial accrued liability—decreased from 73.2% as of August 31, 2014 to 72.9% as of February 28, 2015.

The updated valuation shows that the total normal cost for funding purposes is 1.77% of payroll. The approximate total contribution rate is 2.20% of payroll for the 2016 fiscal year. The total contribution rate for the 2016 fiscal year exceeds the normal cost by 0.43% of payroll, but it is not sufficient to amortize the UAAL over a finite period of time. As a result, the UAAL is expected to grow indefinitely and the funding objective is not currently being realized.

The results of this updated valuation continue to indicate that the currently scheduled member, employer and State contributions are not expected to accumulate sufficient assets in order to pay all of the currently scheduled benefits when due.

Section 811.006 of the Texas Government Code limits the modifications to LECOSRF that would, essentially, increase benefits or lower contributions to the trust unless the current level of benefits and contributions are considered actuarially sound. Section 811.006 defines actuarially sound as a retirement system that is receiving a total contribution rate sufficient to cover the normal cost, administrative expenses, and amortize the UAAL over a period of 31 years, or less. Based on the updated actuarial valuation as of February 28, 2015, the actuarially sound contribution (ASC) rate for LECOSRF for the 2016 fiscal year is 3.10% of payroll.

Certification

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of, where applicable, the Internal Revenue Code and ERISA.

The signing actuaries are independent of the plan sponsor. They are all Enrolled Actuaries, Fellows of the Society of Actuaries, and Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries. Finally, each of the undersigned are experienced in performing valuations for large public retirement systems.

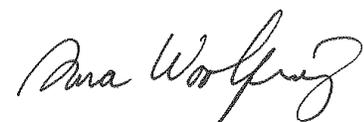
Respectfully submitted,
Gabriel, Roeder, Smith & Company



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



Joseph P. Newton, FSA, EA, MAAA
Senior Consultant



Dana Woolfrey, FSA, EA, MAAA
Consultant

SUMMARY OF VALUATION RESULTS

| | <u>February 28, 2015</u> | <u>August 31, 2014</u> |
|--|--------------------------|-------------------------|
| 1. Valuation Payroll | \$ 1,534,423,350 | \$ 1,609,490,560 |
| 2. Normal Cost Rate (incl Admin Expenses) | 1.77% | 1.77% |
| <u>Actuarial Information on Actuarial Value of Assets (smoothed)</u> | | |
| 3. Actuarial Accrued Liability (AAL) | \$ 1,235,889,699 | \$ 1,206,769,921 |
| 4. Actuarial Value of Assets | <u>900,496,936</u> | <u>883,594,932</u> |
| 5. Unfunded AAL (3 - 4) | \$ 335,392,763 | \$ 323,174,989 |
| 6. Funded Ratio (4 / 3) | 72.9% | 73.2% |
| | <u>2016 Fiscal Year</u> | <u>2015 Fiscal Year</u> |
| 7. Amortization of UAAL Over 31 Years as a Level Percentage of Payroll | 1.33% | 1.19% |
| 8. Contribution Rate Needed to Fund Normal Cost Plus Amortize the UAAL Over 31 Years on Actuarial Value of Assets (2 + 7) | 3.10% | 2.96% |
| 9. Allocation of Contribution Rate | | |
| a. State and Employer rates | 1.70% | 1.70% |
| b. Member rate | <u>0.50%</u> | <u>0.50%</u> |
| c. Total contribution rate (9a + 9b) | 2.20% | 2.20% |
| d. Total normal cost rate (Item 2) | 1.77% | 1.77% |
| e. Available contribution rate to amortize UAAL (9c - 9d) | <u>0.43%</u> | <u>0.43%</u> |
| f. Total contribution rate (9d + 9e) | 2.20% | 2.20% |
| 10. Funding period based on statutory contribution rates (years) | Never | Never |
| <u>Actuarial Information on Market Value of Assets</u> | | |
| 11. Market Value of Assets | \$ 868,811,509 | \$ 869,877,651 |
| 12. Unfunded AAL (3 - 11) | 367,078,190 | 336,892,270 |
| 13. Funded Ratio (11 / 3) | 70.3% | 72.1% |
| 14. Funding period based on statutory contribution rates (years) | Never | Never |
| 15. Contribution Rate Needed to Fund Normal Cost Plus Amortize the UAAL Over 31 Years on Market Value of Assets | 3.20% | 3.01% |

RECONCILIATION OF PLAN NET ASSETS

| | Six Month Period Ending February 28, 2015 | Twelve Month Period Ending August 31, 2014 |
|--|---|--|
| | (1) | (2) |
| 1. Market value of assets at beginning of period | \$ 869,877,651 | \$ 780,669,686 |
| 2. Revenue for the period | | |
| a. Contributions for the period | | |
| i. State (including membership fees) | \$ 12,603,235 | \$ 27,757,980 |
| ii. Member (including penalty interest) | 3,824,906 | 8,179,640 |
| iii. Total | <u>\$ 16,428,141</u> | <u>\$ 35,937,620</u> |
| b. Net investment income | \$ 13,562,476 | \$ 111,740,551 |
| c. Total revenue | \$ 29,990,617 | \$ 147,678,171 |
| 3. Disbursements for the period | | |
| a. Benefit payments and refunds | 30,467,212 | 57,146,704 |
| b. Net transfers from TRS | 0 | 0 |
| c. Administrative expenses | 589,547 | 1,323,502 |
| d. Total expenditures | <u>31,056,759</u> | <u>58,470,206</u> |
| 4. Increase in net assets (Item 2c - Item 3d) | \$ (1,066,142) | \$ 89,207,965 |
| 5. Market value of assets at end of period (Item 1 + Item 4) | \$ 868,811,509 | \$ 869,877,651 |
| 6. Estimated rate of return for the period | 1.6% | 14.7% |

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

| | Six Month Period Ending February 28, 2015 <u>(1)</u> | Twelve Month Period Ending August 31, 2014 <u>(2)</u> |
|---|---|--|
| 1. Actuarial value of assets at beginning of period | \$ 883,594,932 | \$ 843,016,798 |
| 2. Net new investments | | |
| a. Contributions for the period | \$ 16,428,141 | \$ 35,937,620 |
| b. Disbursements for the period | <u>(31,056,759)</u> | <u>(58,470,206)</u> |
| c. Subtotal | (14,628,618) | (22,532,586) |
| 3. Assumed investment return rate | 4.00% | 8.00% |
| 4. Expected return | \$ 35,051,225 | \$ 66,540,040 |
| 5. Expected actuarial value of assets at end of period (Item 1 + Item 2c + Item 4) | \$ 904,017,539 | \$ 887,024,252 |
| 6. Market value of assets at end of period | \$ 868,811,509 | \$ 869,877,651 |
| 7. Excess earnings/(shortfall) (Item 6 - Item 5) | \$ (35,206,030) | \$ (17,146,601) |
| 8. Excess earnings/(shortfall) recognized* | \$ (3,520,603) | \$ (3,429,320) |
| 9. Actuarial value of assets (Item 5 + Item 8) | \$ 900,496,936 | \$ 883,594,932 |
| 10. Estimated rate of return for the period | 3.6% | 7.6% |
| 11. Actuarial value as percentage of market value | 103.6% | 101.6% |

* 10% was recognized for the six month period ending February 28, 2015 and 20% was recognized for the twelve month period ending August 31, 2014.

JUDICIAL RETIREMENT SYSTEM OF TEXAS, PLAN 2
AUGUST 31, 2014 ACTUARIAL VALUATION
UPDATED AS OF FEBRUARY 28, 2015

April 8, 2015

Ms. Ann Bishop
Executive Director
Employees Retirement System of Texas
200 E. 18th Street
Austin, TX 78701

Re: Update Actuarial Valuation as of February 28, 2015

Dear Ms. Bishop:

We certify that the information contained in this report is accurate and fairly presents the actuarial position of the Judicial Retirement System of Texas, Plan 2 (JRS-2) as of February 28, 2015. This valuation is based on an update to the August 31, 2014 valuation, reflecting the impact of investment, salary, and payroll experience on the funded position of JRS-2 through February 28, 2015, in accordance with the General Appropriations Act of the 84th Legislature.

Updated Actuarial Valuation

The updated valuation was primarily based upon information as of August 31, 2014, furnished by ERS staff, concerning system benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries.

For purposes of the updated actuarial valuation, ERS provided the following information which was used to update the information originally provided for the August 31, 2014 actuarial valuation:

- Assets as of February 28, 2015
- Reconciliation of Assets from August 31, 2014 through February 28, 2015
- Covered Payroll of Active Membership from August 31, 2014 through February 28, 2015
- Headcount and contribution balances for contributing members as of February 28, 2015
- Headcount and contribution balances for non-contributing members as of February 28, 2015

Table 1 of this report summarizes the results of the updated actuarial valuation as of February 28, 2015, Table 2 summarizes the changes in plan assets from August 31, 2014 through February 28, 2015, and Table 3 shows the development of the actuarial value of assets as of February 28, 2015.

Unless otherwise noted, this updated actuarial valuation was based on the same assumptions, methods and plan provisions as the August 31, 2014 actuarial valuation. A complete description of these items can be found in the August 31, 2014 Actuarial Valuation Report.

Funding Adequacy

The funding objective of JRS-2 is to fund the sum of the normal cost and the amount necessary to amortize any unfunded actuarial accrued liability over a period that does not exceed 30 years by one or more years. Contribution rates should be established which, over time, will remain level as a percent of payroll.

The member contribution rates are established by State statute and the State contribution rate is set by State statute and legislative appropriation. For the fiscal year beginning September 1, 2015, members accruing benefits contribute 7.20% of payroll and the State contributes 15.663% of total payroll. Since some active JRS-2 members have elected to cease contributing to the plan as well as cease accruing additional benefits, the effective member contribution rate for the fiscal year beginning September 1, 2015 is 7.15% of payroll. The member contribution rates are scheduled to increase to an ultimate rate of 7.50% of payroll in the 2017 fiscal year. This ultimate rate is subject to future legislative appropriations.

The unfunded actuarial accrued liability (UAAL) of JRS-2 decreased from \$38 million as of August 31, 2014 to \$37 million as of February 28, 2015. Additionally, the funded ratio of JRS-2—actuarial value of assets divided by the actuarial accrued liability—increased from 90.2% as of August 31, 2014 to 90.6% as of February 28, 2015.

The updated valuation shows that the total normal cost for funding purposes is 21.03% of payroll. The total contribution rate is 22.813% of payroll for the 2016 fiscal year, and potentially increasing to 23.163% of payroll for all future fiscal years. The total contribution rate for the 2016 fiscal year exceeds the normal cost by 1.783% of payroll, but it is not sufficient to amortize the UAAL over a finite period of time. As a result, the UAAL is expected to grow indefinitely and the funding objective is not currently being realized.

Section 840.106 of the Texas Government Code limits the modifications to JRS-2 that would, essentially, increase benefits or lower contributions to the trust unless the current level of benefits and contributions are considered actuarially sound. Section 840.106 defines actuarially sound as a retirement system that is receiving a total contribution rate sufficient to cover the normal cost, administrative expenses, and amortize the UAAL over a period of 31 years, or less. Based on the updated actuarial valuation as of February 28, 2015, the actuarially sound contribution (ASC) rate for JRS-2 for the 2016 fiscal year is 23.75% of payroll.

Certification

All of our work conforms with generally accepted actuarial principles and practices, and to the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of, where applicable, the Internal Revenue Code and ERISA.

The signing actuaries are independent of the plan sponsor. They are all Enrolled Actuaries, Fellows of the Society of Actuaries, and Members of the American Academy of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries. Finally, each of the undersigned are experienced in performing valuations for large public retirement systems.

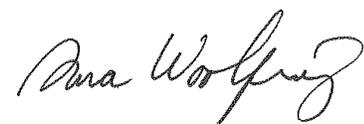
Respectfully submitted,
Gabriel, Roeder, Smith & Company



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



Joseph P. Newton, FSA, EA, MAAA
Senior Consultant



Dana Woolfrey, FSA, EA, MAAA
Consultant

SUMMARY OF VALUATION RESULTS

| | <u>February 28, 2015</u> | <u>August 31, 2014</u> |
|--|--------------------------|-------------------------|
| 1. Valuation Payroll | \$ 80,507,144 | \$ 79,122,500 |
| 2. Normal Cost Rate (incl Admin Expenses) | 21.03% | 21.03% |
| <u>Actuarial Information on Actuarial Value of Assets (smoothed)</u> | | |
| 3. Actuarial Accrued Liability (AAL) | \$ 400,645,053 | \$ 386,286,372 |
| 4. Actuarial Value of Assets | 363,152,750 | 348,430,575 |
| 5. Unfunded AAL (3 - 4) | \$ 37,492,303 | \$ 37,855,797 |
| 6. Funded Ratio (4 / 3) | 90.6% | 90.2% |
| | <u>2016 Fiscal Year</u> | <u>2015 Fiscal Year</u> |
| 7. Amortization of UAAL Over 31 Years as a Level Percentage of Payroll | 2.72% | 2.83% |
| 8. Contribution Rate Needed to Fund Normal Cost Plus Amortize the UAAL Over 31 Years based on Actuarial Value of Assets (2 + 7) | 23.75% | 23.86% |
| 9. Allocation of Contribution Rate | | |
| a. State and Employer rates | 15.663% | 15.663% |
| b. Member rate (approximate) | 7.15% | 6.87% |
| c. Total contribution rate (9a + 9b) | 22.813% | 22.533% |
| d. Total normal cost rate (Item 2) | 21.03% | 21.03% |
| e. Available contribution rate to amortize UAAL (9c - 9d) | 1.783% | 1.503% |
| f. Total contribution rate (9d + 9e) | 22.813% | 22.533% |
| 10. Funding period based on statutory contribution rates (years) | Never | Never |
| <u>Actuarial Information on Market Value of Assets</u> | | |
| 11. Market Value of Assets | \$ 371,096,050 | \$ 365,290,077 |
| 12. Unfunded AAL (3 - 11) | 29,549,003 | 20,996,295 |
| 13. Funded Ratio (11 / 3) | 92.6% | 94.6% |
| 14. Funding period based on statutory contribution rates (years) | Never | 49 |
| 15. Contribution Rate Needed to Fund Normal Cost Plus Amortize the UAAL Over 31 Years based on Market Value of Assets | 23.20% | 22.60% |

RECONCILIATION OF PLAN NET ASSETS

| | Six Month Period Ending February 28, 2015 <u>(1)</u> | Twelve Month Period Ending August 31, 2014 <u>(2)</u> |
|--|---|--|
| 1. Market value of assets at beginning of period | \$ 365,290,077 | \$ 318,384,742 |
| 2. Revenue for the period | | |
| a. Contributions for the period | | |
| i. State (including membership fees) | \$ 6,171,494 | \$ 12,210,663 |
| ii. Member (including penalty interest) | 2,761,833 | 5,195,121 |
| iii. Total | <u>\$ 8,933,327</u> | <u>\$ 17,405,784</u> |
| b. Net investment income | \$ 5,901,696 | \$ 46,186,114 |
| c. Total revenue | \$ 14,835,023 | \$ 63,591,898 |
| 3. Disbursements for the period | | |
| a. Benefit payments and refunds | 8,902,286 | 16,419,717 |
| b. Net transfers from TRS | 0 | 0 |
| c. Administrative expenses | 126,764 | 266,846 |
| d. Total expenditures | <u>9,029,050</u> | <u>16,686,563</u> |
| 4. Increase in net assets (Item 2c - Item 3d) | \$ 5,805,973 | \$ 46,905,335 |
| 5. Market value of assets at end of period (Item 1 + Item 4) | \$ 371,096,050 | \$ 365,290,077 |
| 6. Estimated rate of return for the period | 1.6% | 14.7% |

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

| | Six Month Period Ending February 28, 2015 (1) | Twelve Month Period Ending August 31, 2014 (2) |
|---|--|---|
| 1. Actuarial value of assets at beginning of period | \$ 348,430,575 | \$ 318,025,658 |
| 2. Net new investments | | |
| a. Contributions for the period | \$ 8,933,327 | \$ 17,405,784 |
| b. Disbursements for the period | (9,029,050) | (16,686,563) |
| c. Subtotal | (95,723) | 719,221 |
| 3. Assumed investment return rate | 4.00% | 8.00% |
| 4. Expected return | \$ 13,935,309 | \$ 25,470,821 |
| 5. Expected actuarial value of assets at end of period (Item 1 + Item 2c + Item 4) | \$ 362,270,161 | \$ 344,215,700 |
| 6. Market value of assets at end of period | \$ 371,096,050 | \$ 365,290,077 |
| 7. Excess earnings/(shortfall) (Item 6 - Item 5) | \$ 8,825,889 | \$ 21,074,377 |
| 8. Excess earnings/(shortfall) recognized* | \$ 882,589 | \$ 4,214,875 |
| 9. Actuarial value of assets (Item 5 + Item 8) | \$ 363,152,750 | \$ 348,430,575 |
| 10. Estimated rate of return for the period | 4.3% | 9.3% |
| 11. Actuarial value as percentage of market value | 97.9% | 95.4% |

* 10% was recognized for the six month period ending February 28, 2015 and 20% was recognized for the twelve month period ending August 31, 2014.