## **FINANCIAL STATEMENTS**

Years Ended December 31, 2018 and 2017



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#### **INDEPENDENT AUDITORS' REPORT**

To the Board of Trustees Public School Retirement System of the School District of Kansas City, Missouri Kansas City, Missouri

#### Report on the Financial Statements

We have audited the accompanying financial statements of the Public School Retirement System of the School District of Kansas City, Missouri (the "Retirement System"), which comprise the statements of fiduciary net position as of December 31, 2018 and 2017, and the related statements of changes in fiduciary net position for the years then ended, and the related notes to the financial statements, as listed in the table of contents.

#### Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

### Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

#### Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the Retirement System as of December 31, 2018 and 2017, and the changes in fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.



#### Other Matters

### Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and the schedules of changes in net pension liability and related ratios, employer contributions, and investment returns, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

#### Other Information

Our audits were conducted for the purpose of forming an opinion on the Retirement System's financial statements. The introductory section, titled Management Discussion and Analysis, is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The introductory section has not been subjected to the auditing procedures applied in the audits of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on it.

Kansas City, Missouri June 6, 2019

Mayer Hoffman McCann P.C.



#### MANAGEMENT DISCUSSION AND ANALYSIS

Years Ended December 31, 2018, 2017, and 2016

Our discussion and analysis of the Public School Retirement System of the School District of Kansas City, Missouri's (the "Retirement System") financial performance provides an overview of the Retirement System's financial activities for the years ended December 31, 2018, 2017, and 2016.

#### **Financial statements**

**Statement of Fiduciary Net Position** - The statement of fiduciary net position reports the Retirement System's assets, liabilities, and the resultant net position available at the end of the year (Assets - Liabilities = Net Position). All assets and liabilities are recorded by use of the accrual basis of accounting. The assets are principally made up of cash, investments (at fair market value), and contributions receivable from participating employers and plan members. The liabilities include unpaid and/or accrued expenses as of the end of the year. Overall, this statement shows the financial position of the Retirement System at the specified year-end date.

**Statement of Changes in Fiduciary Net Position** - The statement of changes in fiduciary net position reports the transactions of the Retirement System that occurred during the year. All of the current year's revenue and expenses are taken into account when preparing this statement. This statement not only shows that Additions - Deductions = Net Changes in Fiduciary Net Position, but it also supports the change that has occurred to the prior year's net position value as shown on the statement fiduciary net position.

**Notes to the Financial Statements** - The notes to the financial statements are an integral part of the financial statements. The required supplementary information provides historical and supplementary information, which is considered useful in the evaluation of the condition of the Plan, which is administered by the Retirement System.

#### MANAGEMENT DISCUSSION AND ANALYSIS

Years Ended December 31, 2018, 2017, and 2016

#### **Comparative statements**

The following are summary comparative statements of the Retirement System. For the purpose of this report, these comparative statements have been condensed to give its users a quick overview of the Retirement System's net position and changes in them. One can think of the Retirement System's net position as a way to measure the Retirement System's financial health. Over time, increases or decreases in the Retirement System's net position are indicators of whether its financial health is improving or deteriorating.

|   |    |   | _  | December 31,                                     |    |  | Percentage<br>Change From               | Percentage<br>Change From           |
|---|----|---|----|--|----|--|---|-------------------------------------|
|   |    | 2018  |    | 2017 2016  |    | 2017 to 2018                                     | 2016 to 2017                            |                                     |
| Receivables Investments Cash Prepaid and other assets                   | \$ | 1,101,115<br>600,954,128<br>1,877,215<br>44,631 | \$ | 11,680,121<br>672,509,851<br>2,259,107<br>45,403 | \$ | 12,069,103<br>618,133,183<br>2,401,367<br>45,865 | -90.57%<br>-10.64%<br>-16.90%<br>-1.70% | -3.22%<br>8.80%<br>-5.92%<br>-1.01% |
| Property and equipment, net of accumulated depreciation<br>Total assets | _  | 27,707<br>604,004,796                           | _  | 38,383<br>686,532,865                            | _  | 54,238<br>632,703,756                            | -27.81%<br>-12.02%                      | -29.23%<br>8.51%                    |
| Securities purchased<br>Accounts payable<br>Accrued expenses            |    | 610,736<br>533,053<br>98,528                    |    | 599,450<br>131,416                               |    | 538,494<br>590,186<br>132,463                    | 100.00%<br>-11.08%<br>-25.03%           | -100.00%<br>1.57%<br>-0.79%         |
| Total liabilities   |    | 1,242,317                                       |    | 730,866  | _  | 1,261,143  | 69.98%                                  | -42.05%                             |
| Net position restricted for pensions                                    | \$ | 602,762,479                                     | \$ | 685,801,999                                      | \$ | 631,442,613                                      | -12.11%                                 | 8.61%                               |

### MANAGEMENT DISCUSSION AND ANALYSIS

Years Ended December 31, 2018, 2017, and 2016

### **Comparative statements** (continued)

|  | Years Ended December 31, |  |           |  |              |  | Percentage<br>Change From          | Percentage<br>Change From                    |  |
|--|--------------------------|--|-----------|--|--------------|--|------------------------------------|--|--|
|  |                          | 2018   | 2017 2016 |  | 2017 to 2018 | 2016 to 2017   |                                    |  |  |
| Contributions<br>Net investment income (loss)  | \$                       | 35,146,999<br>(33,250,915)                                   | \$        | 33,890,913<br>103,767,715                                    | \$           | 32,808,515<br>44,337,774                                     | 3.71%<br>-132.04%                  | 3.30%<br>134.04%                             |  |
| Total additions  |                          | 1,896,084  |           | 137,658,628  |              | 77,146,289   | -98.62%                            | 78.44%                                       |  |
| Benefits paid Refunds of contributions Depreciation expense Administrative expenses  Total deductions Increase (decrease) in |                          | 79,333,689<br>4,084,837<br>17,150<br>1,499,928<br>84,935,604 |           | 78,181,575<br>3,581,147<br>15,855<br>1,520,665<br>83,299,242 | _            | 76,898,255<br>3,270,723<br>92,179<br>1,552,025<br>81,813,182 | 1.47%<br>14.07%<br>8.17%<br>-1.36% | 1.67%<br>9.49%<br>-82.80%<br>-2.02%<br>1.82% |  |
| net position  Net position restricted for pensions:  |                          | (83,039,520)   |           | 54,359,386   |              | (4,666,893)  | -252.76%                           | 1264.79%                                     |  |
| Beginning of year  | _                        | 685,801,999  | _         | 631,442,613  | _            | 636,109,506  | 8.61%                              | -0.73%                                       |  |
| End of year  | \$                       | 602,762,479  | \$        | 685,801,999  | \$           | 631,442,613  | -12.11%                            | 8.61%  |  |

For the year ended December 31, 2018, the change in plan net position for the Retirement System decreased just over 12% compared to the year ended December 31, 2017. For the year ended December 31, 2017, the change in plan net position for the Retirement System increased by just under 9% compared to the year ended December 31, 2016.



### STATEMENTS OF FIDUCIARY NET POSITION

December 31, 2018 and 2017

|   | 2018           | 2017           |
|---|----------------|----------------|
| <u>ASSETS</u>                           |                |                |
| Receivables:                            |                |                |
| Plan member contributions               | \$ 211,283     | \$ 685,624     |
| Employers' contributions                | 211,283        | 10,537,802     |
| Due from brokers for securities sold    | 170,533        | -              |
| Accrued interest and dividends          | 508,016        | 456,695        |
|   | 1,101,115      | 11,680,121     |
| Investments, at fair value              |                |                |
| Cash and short term investments         | 24,796,954     | 20,365,076     |
| Commingled domestic fixed income        | 61,188,366     | 54,913,727     |
| High yield fixed income                 | 17,469,725     | 17,979,851     |
| Global fixed income                     | 30,098,964     | 31,604,923     |
| Domestic equity                         | 141,290,033    | 164,878,025    |
| International equity                    | 136,723,420    | 190,814,088    |
| Pooled real estate funds                | 59,819,417     | 55,885,706     |
| Alternative equity funds                | 98,610,742     | 89,533,199     |
| Private equity funds                    | 30,956,507     | 25,437,896     |
| Commodities fund                        |                | 21,097,360     |
|   | 600,954,128    | 672,509,851    |
| Other:                                  |                |                |
| Cash                                    | 1,877,215      | 2,259,107      |
| Prepaid and other assets                | 44,631         | 45,403         |
| Property and equipment, at cost, less   |                |                |
| accumulated depreciation                | 27,707         | 38,383         |
|   | 1,949,553      | 2,342,893      |
| TOTAL ASSETS                            | 604,004,796    | 686,532,865    |
| LIABILITIES                             |                |                |
| Due to brokers for securities purchased | 610,736        | _              |
| Accounts payable                        | 533,053        | 599,450        |
| Accrued payroll expenses                | 98,528         | 131,416        |
| TOTAL LIABILITIES                       | 1,242,317      | 730,866        |
| NET POSITION RESTRICTED FOR PENSIONS    | \$ 602,762,479 | \$ 685,801,999 |

### STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION

Years Ended December 31, 2018 and 2017

|   | <br>2018          | <br>2017          |
|---|-------------------|-------------------|
| Contributions:  |                   |                   |
| Plan members  | \$<br>17,619,145  | \$<br>16,964,351  |
| Employers   | 17,527,854        | <br>16,926,562    |
| Total contributions                                     | 35,146,999        | 33,890,913        |
| Investment income (loss):                               |                   |                   |
| Net realized and unrealized appreciation (depreciation) |                   |                   |
| in fair value of investments                            | (35,336,449)      | 102,069,468       |
| Interest  | 2,051,158         | 2,316,875         |
| Dividends   | <br>4,798,596     | <br>3,767,884     |
|   | (28,486,695)      | 108,154,227       |
| Less: Investment expense                                | 4,764,220         | 4,386,512         |
| Net investment income (loss)                            | (33,250,915)      | 103,767,715       |
| TOTAL ADDITIONS   | <br>1,896,084     | <br>137,658,628   |
| Benefits paid   | 79,333,689        | 78,181,575        |
| Refund of contributions                                 | 4,084,837         | 3,581,147         |
| Depreciation expense                                    | 17,150            | 15,855            |
| Administrative expenses                                 | <br>1,499,928     | 1,520,665         |
| TOTAL DEDUCTIONS  | 84,935,604        | 83,299,242        |
| NET INCREASE (DECREASE) IN NET POSITION                 | (83,039,520)      | 54,359,386        |
| NET POSITION RESTRICTED FOR PENSION                     |                   |                   |
| Beginning of year                                       | <br>685,801,999   | <br>631,442,613   |
| End of year   | \$<br>602,762,479 | \$<br>685,801,999 |
|   | <br>              | <br>              |

#### **NOTES TO FINANCIAL STATEMENTS**

### (1) <u>Description of plan</u>

The following description of the Public School Retirement System of the School District of Kansas City, Missouri (the "Retirement System") provides only general information. Participants should refer to the Missouri Revised Statutes regarding the Retirement System or the Summary Plan Description for a more complete description of the Retirement System's provisions, which are available from the Retirement System's administrator.

General - The Retirement System is a cost-sharing multiple-employer defined benefit pension plan (the "Plan"), which was established by the General Assembly of the State of Missouri and is exempt from the provisions of the Employee Retirement Income Security Act of 1974. The Board of Trustees of the Retirement System ("Board of Trustees") administers and operates the Plan in accordance with the statutes of the State of Missouri. At December 31, 2018, participating employers consisted of the School District of Kansas City, Missouri; the Kansas City, Missouri Public Library District; the Retirement System; and the following charter schools: Academie LaFayette, Academy for Integrated Arts, Allen Village Charter School, Brookside Charter School, Citizens of the World Kansas City, Crossroads Charter Schools, DeLaSalle Charter School, Ewing Marion Kauffman School, Frontier Schools, Genesis School, Inc., Gordon Parks Elementary, Guadalupe Center Schools, Hogan Preparatory Academy, Hope Leadership Academy, Kansas City International Academy, Kansas City Neighborhood Academy, KIPP Endeavor Academy, Lee A. Tolbert Community Academy, Pathway Academy, Scuola Vita Nuova, and University Academy.

**Eligibility** - All regular, full-time employees of the participating employers become members of the Plan as a condition of employment if they are in a position requiring at least 25 hours of work per week and nine calendar months per year. Employees who retire after June 30, 1999 and were hired after 1961, but before January 1, 2014 are members of Plan B. Employees hired after January 1, 2014 are members of Plan C. At January 1, 2018 and 2017, respectively, the Plan's membership consisted of:

|   | 2018   | 2017   |
|---|--------|--------|
| Active plan members   | 3,760  | 3,701  |
| Retirees and beneficiaries receiving benefits Terminated plan members, vested entitled to but not yet | 4,112  | 4,032  |
| receiving benefits  Terminated plan members, nonvested entitled to a refund of                        | 522    | 490    |
| contributions plus accrued interest   | 2,449  | 2,298  |
| Total plan membership   | 10,843 | 10,521 |

**Contributions** - For the years beginning January 1, 2018 and 2017, members were required to contribute 9% of their annual covered salary. Employers were required to match the contributions made by their employees.

During 2018, the Missouri General Assembly passed legislation that increased the employer contribution rate to 10.50% of annual covered salary effective January 1, 2019, and then to 12.00% of annual covered salary effective January 1, 2020. Beginning July 1, 2021, the employer contribution rate will be the greater of (1) the actuarial required contribution rate less the member contribution rate, or (2) 12.00% of annual covered salary, until the Retirement System is fully funded. Once the Retirement System is fully funded, the employer contribution rate may increase or decrease, in subsequent years, depending on valuation results and the employee contribution rate may decrease from 9% depending on valuation results. However, such changes are subject to statutory limitations.

#### **NOTES TO FINANCIAL STATEMENTS**

#### (1) <u>Description of plan</u> (continued)

**Contributions (continued)** - The contribution rate is set each year by the Board of Trustees of the Kansas City Public School Retirement System upon the recommendation of the Retirement System's actuary within the contribution restrictions of RSMo Section 169.350 subsections 5 and 6

**Service** - Creditable service is membership service. This is service for which required contributions have been made. Members of Plan B are effectively limited to 30 years of creditable service, regardless of the number of years actually worked, unless the member earned more than 30 years prior to August 28, 1993. Members of Plan C are effectively limited to 34.25 years of creditable service, regardless of the number of years actually worked.

#### Compensation

Annual compensation - Compensation in excess of the limitations set forth in Section 401(a)(17) of the Internal Revenue Code will be disregarded for purposes of determining contributions and benefits for members of Plan B and C. A member's annual compensation is the member's regular compensation.

Average final compensation - For members of Plan B and C, the average final compensation is the highest average compensation paid during any four consecutive years of creditable service.

#### **Normal retirement**

Eligibility - A member of Plan B may retire (a) after the completion of five years of creditable service, provided such member has attained at least the age of 60 or (b) after the member has accumulated a minimum of 75 credits (effective August 28, 1998), where each year of creditable service plus a member's age equals 75 credits. A member of Plan C may retire (a) after the completion of five years of creditable service, provided such member has attained at least the age of 62 or (b) after the member has accumulated a minimum of 80 credits, where each year of creditable service plus a member's age equals 80 credits.

Benefit - For a member of Plan B, the normal monthly retirement benefit equals the product of one-twelfth of 2.00% (1.75% for members who retired prior to June 30, 1999) of the member's average final compensation and years of creditable service, subject to a maximum of 60% of their average final compensation. The normal monthly retirement benefit for a member of Plan B whose years of creditable service exceeded 34.25 years on August 28, 1993, shall equal the product of 1.75% and the member's years of creditable service on August 28, 1993. For a member of Plan C, the normal monthly retirement benefit equals the product of one-twelfth of 1.75% of the member's average final compensation and years of creditable service, subject to a maximum of 60% of their average final compensation.

Minimum benefit - Effective January 1, 1996, any member with at least ten years of service, but less than twenty years, is entitled to a minimum monthly retirement benefit equal to the sum of \$150 and \$15 for each full year of creditable service in excess of ten years or the actuarial equivalent if an option is elected. Any member with at least twenty years of creditable service at retirement is entitled to a minimum monthly retirement benefit of \$300 or the actuarial equivalent of \$300 if an option is elected. Beneficiaries of deceased members who retired with at least ten years of creditable service and elected one of the optional plans for payment of benefits may receive the actuarial equivalent of the minimum monthly retirement benefit available for the option chosen.

#### **NOTES TO FINANCIAL STATEMENTS**

#### (1) <u>Description of plan</u> (continued)

#### Early retirement

*Eligibility* - A member with at least five years of creditable service and a minimum age of fifty-five is eligible for early retirement.

Benefit - A member eligible for early retirement will receive a reduced benefit, calculated as for normal retirement, which recognizes service and compensation to the actual retirement date. The reduction in benefit will provide a benefit which is actuarially equivalent to the normal retirement benefit that would be payable at the member's normal retirement date.

### **Disability retirement**

*Eligibility* - A member with at least five years of creditable service who is certified to be totally incapacitated for performance of duty by the Medical Board (as designated by the Board of Trustees) is eligible for disability retirement.

Benefit - A disabled member will receive a benefit calculated as for normal retirement, based on credible service and average final compensation at the actual disability retirement date, or the minimum disability benefit whichever is greater. The minimum disability retirement benefit shall be the lesser of:

- 1. 25% of the member's average final compensation; or
- 2. The member's service retirement benefit calculated on the member's average final compensation and the maximum number of years of creditable service the member would have earned had the member remained an employee until age 60.

#### Termination benefits - vested

*Eligibility* - A member who has at least five years of creditable service earns a vested interest in their accrued benefit, provided the member leaves their contributions in the Plan.

Benefit - The vested benefit is calculated as a normal retirement benefit based on a member's creditable service and average final compensation on the termination date. The benefit is payable, at minimum, on the member's normal retirement date.

#### Termination benefits - non-vested

If the member's termination is for reasons other than death or retirement, and if the member has not met the vesting or retirement requirements, the member's contributions with interest will be refunded.

### Death benefit

*Prior to retirement* - For a member who passes away while actively employed, the member's accumulated contributions with interest will be paid to the member's beneficiary. Certain beneficiaries of a member of Plan B or C have the option to receive a monthly retirement benefit or a refund of the member's contributions with interest. All beneficiaries are guaranteed to receive at least the member's accumulated contributions at retirement, if a member passes away before electing an option.

#### **NOTES TO FINANCIAL STATEMENTS**

#### (1) <u>Description of plan</u> (continued)

#### Death benefit (continued)

Post retirement - The optional form of benefit payment selected under either Plan B or Plan C will determine what, if any, benefits are payable upon death after retirement.

Option 1 - The retiree's designated survivor will receive, for life, the same level of monthly retirement benefit. In the event that the retiree's designated survivor predeceases the retiree, the retiree's monthly retirement benefit will be adjusted to the amount it would have been, had the retiree not elected Option 1.

Option 2 - The retiree's designated survivor will receive, for life, a monthly retirement benefit equal to one-half the retiree's benefit. In the event the retiree's designated survivor predeceases the retiree, the retiree's monthly benefit will be adjusted to the amount it would have been, had the retiree not elected Option 2.

Option 3 - No benefits are payable to the retiree's estate or any beneficiary. Retirement benefits payable under this option will be actuarially increased from the normal formula.

If the death of any retiree who has not elected an option occurs before they have received total benefits at least as large as their accumulated contributions and interest, the difference shall be paid to the deceased's beneficiary, if living, or to their estate.

**Benefit increase adjustments** - The Board of Trustees shall determine annually whether or not the Retirement System can provide an increase in benefits for those retirees who, as of January 1 preceding the date of such increase, have been retired at least one year (three years prior to January 1, 2002). Any increase also applies to optional retirement allowances paid to a retiree's beneficiary. Before any increases are made, the following requirements must be satisfied:

- 1. The Retirement System funded ratio as of January 1<sup>st</sup> of the preceding year of the proposed increase must be at least 100% after adjusting for the effect of the proposed increase. The funded ratio is the ratio of assets to the pension benefit obligation.
- 2. The actuarially required contribution rate, after adjusting for the effect of the proposed increase, may not exceed the statutory contribution rate.
- 3. The actuary must certify that the proposed increase will not impair the actuarial soundness of the Retirement System.

In accordance with the Benefit Increase Adjustments Policy, if an increase is permissible, the amount of the increase will be equal to the lesser of 3% or the percentage increase in the CPI for the preceding year, subject to a cumulative increase of 100% subsequent to December 31, 2000.

The Board of Trustees reserves the right, at its sole discretion, not to award any Benefit Increase Adjustment or other supplements for any year, even if the statutory requirements for an increase are satisfied, or to provide increases in greater or lesser amounts than prescribed by this policy. For the years ended December 31, 2018 and 2017 there was no Benefit Increase Adjustment or an extra check issued to eligible retirees.

Administration of the Retirement System - The Board of Trustees (the "Board") is responsible for the general administration and proper operation of the Retirement System. The Board consists of twelve members: four members appointed by the Board of Education, one member appointed by the Board of Trustees of the Library District, four members elected by and from the members of the Retirement System, two members elected by and from the retirees of the Retirement System, and the Superintendent of Schools of the School District of Kansas City, Missouri. The Board hires an Executive Director to manage the day-to-day operations and implement policies as set by the Board.

#### **NOTES TO FINANCIAL STATEMENTS**

### (1) <u>Description of plan</u> (continued)

**Administrative expenses** - All expenses of the Retirement System are paid by the Plan. Fees related to the administration of Plan are included in administrative expenses. Investment related expenses are included in net appreciation (depreciation) of fair value of investments.

### (2) <u>Summary of significant accounting policies</u>

Basis of accounting - The financial statements of the Retirement System are prepared on the accrual method of accounting. Plan member and employer contributions are recognized in the period in which the contributions are due. Beginning in 2018, the School District of Kansas City, Missouri and the Kansas City, Missouri Public Library District began paying their employer portions of their retirement payment each month rather than one year in arrears. Benefits and refunds are recognized when due and payable in accordance with the terms of the Plan.

The Retirement System's financial statements, notes to the financial statements, and required supplementary information were prepared in conformity with Governmental Accounting Standards Board ("GASB") Statement No.67, *Financial Reporting for Pension Plans*, as amended. GASB No. 67 addresses accounting and financial reporting requirements for pension plans. Significant requirements include an actuarial calculation of total and net pension liability. It also includes comprehensive footnote disclosures regarding the pension liability, the sensitivity of the net pension liability to the discount rate and extensive investment activity disclosures.

**Use of estimates** - The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect reported amounts of assets and liabilities and changes therein, and disclosures of contingent assets and liabilities. Accordingly, actual results may differ from those estimates.

**Property and equipment** - Property and equipment are carried at cost. Purchases are depreciated over their estimated useful lives by use of the straight-line method. The useful lives for the purpose of computing depreciation are:

Equipment 7 years Software 5 years

**Investment valuation and income recognition** - The net unrealized appreciation (depreciation) in the fair value of investments for the period reflects the net increase in the fair value of the investments, on an aggregate basis, between the beginning and the end of the reporting period. The net realized gain or loss on sale of investments is the difference between the proceeds received and the cost of the investment sold. The net realized gains and losses have been combined with the net unrealized appreciation and depreciation for purposes of this report.

Purchases and sales of securities are recorded on a trade-date basis. Investment income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date.

**Rate of return** - For the years ended December 31, 2018 and 2017, the annual time-weighted return on the Retirement System's investments, net of investment expense was (5.40%) and 17.29%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

#### **NOTES TO FINANCIAL STATEMENTS**

### (2) <u>Summary of significant accounting policies</u> (continued)

The Retirement System's policy in regard to the allocation of invested assets is established and may be amended by the Board of Trustees. Plan assets are managed on a total return basis with a long-term objective of achieving and maintaining a fully funded status for the benefits provided through the pension plan. In 2017, an asset liability study was completed at the request of the Board. This study identified new optimal portfolio mixes with new asset classes for the Board's consideration. The Board chose a new asset allocation mix that is expected to increase their long-term return slightly while lowering the overall risk of the portfolio. The table below illustrates the Retirement System's Board of Trustees approved asset allocation as of December 31, 2018.

| Asset Class                    | 2018 Target Allocation |
|--------------------------------|------------------------|
| US Equity                      | 22.50 %                |
| International Developed Equity | 12.00 %                |
| Real Estate                    | 12.00 %                |
| Multi-Asset Class              | 10.50 %                |
| International Emerging Equity  | 10.00 %                |
| Core Fixed Income              | 10.00 %                |
| Private Equity                 | 7.50 %                 |
| Hedge Funds of Funds           | 5.00 %                 |
| International Fixed Income     | 5.00 %                 |
| Commodities                    | 3.00 %                 |
| High Yield                     | 2.50 %                 |
| Total                          | 100.00 %               |

**Concentration risk** - As of December 31, 2018 and 2017, the Retirement System has the following concentrations defined as investments (other than those issued or guaranteed by the U.S. government in any one organization) that represent 5% or more of the Retirement System's net position.

|                                       | <br>Decen        | nber ( | 31,        |
|---------------------------------------|------------------|--------|------------|
|                                       | <br>2018         |        | 2017       |
| Rhumbline S&P 500 Pooled Index Fund   | \$<br>65,552,721 | \$     | 79,649,292 |
| Rhumbline S&P Mid-Cap 400 Index Fund  | 38,604,636       |        | 43,413,903 |
| AQR Global Risk Premium Fund          | 37,191,409       |        | 42,911,304 |
| Earnest Partners Emerging Market Fund | 33,649,273       |        | 44,671,822 |
| Wells Capital Emerging Market Fund    | *                |        | 37,489,154 |

<sup>\*</sup> Not applicable, investment amount is below 5%.

#### **NOTES TO FINANCIAL STATEMENTS**

### (2) <u>Summary of significant accounting policies</u> (continued)

**Custodial credit risk** - Custodial credit risk is when, in the event a financial institution or counterparty fails, the Retirement System would not be able to recover the value of deposits, investments or collateral securities that are in the possession of an outside party. All investments are held in the Retirement System's name and are not subject to creditors of the custodial financial institution.

**Currency risk** - Currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment. All investments held by the Retirement System at December 31, 2018 and 2017 were in United States currency.

**Credit risk** - Credit risk is the risk that an issuer or other counterparty to a debt investment will not fulfill its obligations. The Retirement System's investment policies require that any investment manager have at least 90% of holdings in issues rated BBB or higher by both Standard & Poor's Corporation and Moody's Investors Service or their equivalents. Each portfolio is required to maintain a reasonable risk level relative to its benchmark. The Retirement System's assets as of December 31, 2018 and 2017 subject to credit risk are shown with current credit ratings below:

|                          | December      | · 31, 2018 |               |    | Quality   |     |           |       |          |
|--------------------------|---------------|------------|---------------|----|-----------|-----|-----------|-------|----------|
|                          | Fair Value    | %          | AAA/Aaa       |    | AA/Aa     |     | A/A       | BE    | B/Baa    |
| U.S. Treasuries          | \$ 17,146,660 | 28.0%      | \$ 17,146,660 | \$ | -         | \$  | -         | \$    | -        |
| U.S. Government Agencies | 18,424,029    | 30.1%      | 18,424,029    |    | -         |     | -         |       | -        |
| Corporate Bonds          | 24,937,874    | 40.8%      | 8,204,502     |    | -         |     | 5,233,828 | 11    | ,499,544 |
| Municipals               | 679,803       | 1.1%       | 204,234       | _  | 475,569   | _   | -         |       |          |
|                          | \$ 61,188,366 | 100.0%     | \$ 43,979,425 | \$ | 475,569   | \$  | 5,233,828 | \$ 11 | ,499,544 |
|                          | December      | 31, 2017   |               |    | Quality   | Rat | ing       |       |          |
|                          | Fair Value    | %          | AAA/Aaa       |    | AA/Aa     |     | A/A       | BB    | B/Baa    |
| U.S. Treasuries          | \$ 9,275,992  | 15.2%      | \$ 9,275,992  | \$ | -         | \$  | -         | \$    | -        |
| U.S. Government Agencies | 14,498,140    | 23.7%      | 14,498,140    |    | -         |     | -         |       | -        |
| Corporate Bonds          | 29,579,129    | 48.3%      | 8,795,113     |    | 799,060   |     | 4,702,789 | 15    | ,282,167 |
| Municipals               | 1,560,465     | 2.6%       | 735,591       |    | 499,656   |     | 325,219   |       |          |
|                          | \$ 54,913,727 | 100.0%     | \$ 33,304,836 | \$ | 1,298,716 | \$  | 5,028,008 | \$ 15 | ,282,167 |

**Interest rate risk** - Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The Retirement System's assets as of December 31, 2018 and 2017 subject to interest rate risk are shown below grouped by effective duration ranges:

|   | D          | ecember 31,             |                                  |                | In | vestment Ma          | turi   | ties (in years  | )  |                       |  |
|---|------------|-------------------------|----------------------------------|----------------|----|----------------------|--------|-----------------|----|-----------------------|--|
|   |            | 2018                    |                                  | Less           |    |                      |        |                 |    | Greater               |  |
| Security Description                                | Fair Value |                         |                                  | Than 1         |    | 1 - 5                | 6 - 10 |                 |    | Than 10               |  |
| U.S. Treasury and Government Agencies<br>Municipals | \$         | 35,570,689<br>679.803   | \$                               | 495,330        | \$ | 7,272,492            | \$     | 5,605,523       | \$ | 22,197,344<br>679,803 |  |
| Corporate BondsUnited States                        |            | 24,937,874              |                                  | 478,094        |    | 13,035,699           |        | 5,397,962       |    | 6,026,120             |  |
|   | \$         | 61,188,366              | \$                               | 973,424        | \$ | 20,308,191           | \$     | 11,003,485      | \$ | 28,903,267            |  |
|   | D          | ecember 31,             | Investment Maturities (in years) |                |    |                      |        |                 |    |                       |  |
| Security Description                                |            | 2017<br>Fair Value      |                                  | Less<br>Than 1 |    | 1 - 5                |        | 6 - 10          |    | Greater<br>Than 10    |  |
| U.S. Treasury and Government Agencies               | \$         | 23,774,133              | \$                               | 719,487        | \$ | 4,668,849            | \$     | 2,704,157       | \$ | 15,681,639            |  |
| Municipals Corporate BondsUnited States             |            | 1,560,465<br>29,579,129 |                                  | 57,886<br>-    |    | 789,409<br>9,884,110 |        | -<br>10,211,371 |    | 713,170<br>9,483,648  |  |
|   | \$         | 54,913,727              | \$                               | 777,373        | \$ | 15,342,368           | \$     | 12,915,528      | \$ | 25,878,457            |  |

#### **NOTES TO FINANCIAL STATEMENTS**

#### (3) Fair value measurements

Level 2

The framework for measuring fair value provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy are described below:

Level 1 Inputs to the valuation methodology are unadjusted quoted prices for identical assets or liabilities in active markets that the Plan has the ability to access.

Inputs to the valuation methodology include quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar assets and liabilities in inactive markets; inputs other than quoted market prices that are observable for the asset or liability; and inputs that are derived principally from or corroborated by observable market data by correlation or other means. If the asset or liability has a specified (contractual) term, the Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3 Inputs to the valuation methodology are unobservable and significant to the fair value measurement.

The asset or liability's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques used need to maximize the use of observable inputs and minimize the use of unobservable inputs.

Following is a description of the valuation methodologies used for assets measured at fair value.

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest-level input that is significant to the valuation.

Debt and equity securities classified in Level 1 are valued using prices quoted in active markets for those securities.

Debt securities classified in Level 2 are valued using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, yields, maturities, call features, and ratings. Matrix pricing is used to value securities based on the securities' relationship to benchmark quoted prices. Level 2 debt securities have nonproprietary information that is readily available to market participants, from multiple independent sources, which are known to be actively involved in the market.

#### **NOTES TO FINANCIAL STATEMENTS**

### (3) <u>Fair value measurements</u> (continued)

|  | Fair Value Measurements as of December 31, 2018                         |             |                                     |            |                                       |           |    |                 |  |  |
|--|---|-------------|-------------------------------------|------------|---------------------------------------|-----------|----|-----------------|--|--|
| Investment Time  | Quoted Prices in<br>Active Markets<br>for Identical<br>Assets (Level 1) |             | Significant Other Observable Inputs |            | Significant<br>Unobservable<br>Inputs |           | Та | otal Fair Value |  |  |
| Investment Type  | $\overline{}$   | . ,         | _                                   | (Level 2)  | •                                     | (Level 3) |    |                 |  |  |
| Common stocks  | \$  | 108,523,615 | \$                                  | · -        | \$                                    | -         | \$ | 108,523,615     |  |  |
| Real estate investment trusts                                      |   | 2,160,723   |                                     | =          |                                       | -         |    | 2,160,723       |  |  |
| Total equity investments   |   | 110,684,338 |                                     | -          |                                       | -         |    | 110,684,338     |  |  |
| U.S. Treasuries  |   | 17,146,660  |                                     | -          |                                       | -         |    | 17,146,660      |  |  |
| U.S. Government Agencies   |   | -           |                                     | 18,424,029 |                                       | -         |    | 18,424,029      |  |  |
| Collateralized mortgage-backed securities                          |   | -           |                                     | 2,571,242  |                                       | -         |    | 2,571,242       |  |  |
| Corporate bonds  |   | -           |                                     | 16,733,372 |                                       | -         |    | 16,733,372      |  |  |
| Corporate asset-backed securities                                  |   | -           |                                     | 5,633,260  |                                       | -         |    | 5,633,260       |  |  |
| Municipals   |   | -           |                                     | 679,803    |                                       | -         |    | 679,803         |  |  |
| Total fixed income investments                                     |   | 17,146,660  |                                     | 44,041,706 |                                       | -         |    | 61,188,366      |  |  |
| Total investments by fair value level                              | \$  | 127,830,998 | \$                                  | 44,041,706 | \$                                    | -         | =  | 171,872,704     |  |  |
| Investments measured at the NAV practical expedient <sup>(a)</sup> |   |             |                                     |            |                                       |           |    | 404,284,470     |  |  |
| Investments measured at amortized cost <sup>(b)</sup>              |   |             |                                     |            |                                       |           |    | 24,796,954      |  |  |
| Total investments measured at fair value                           |   |             |                                     |            |                                       |           | \$ | 600,954,128     |  |  |

|  | Fair Value Measurements as of December 31, 2017                        |             |  |            |    |   |    |                 |  |  |
|--|--|-------------|--|------------|----|---|----|-----------------|--|--|
| Investment Type  | Ouote Prices in<br>Active Markets<br>for Identical<br>Assets (Level 1) |             | Significant Other<br>Observable<br>Inputs<br>(Level 2) |            |    | Significant<br>nobservable<br>Inputs<br>(Level 3) | To | otal Fair Value |  |  |
| Common stocks  | \$   | 148,432,022 | \$   |            | \$ |   | \$ | 148,432,022     |  |  |
| Real estate investment trusts                                      |  | 2,035,854   |  | -          |    |   |    | 2,035,854       |  |  |
| Total equity investments   |  | 150,467,876 |  | =          |    | -   |    | 150,467,876     |  |  |
| U.S. Treasuries  |  | 9,275,992   |  | -          |    | _   |    | 9,275,992       |  |  |
| U.S. Government Agencies   |  | -           |  | 13,876,921 |    | -   |    | 13,876,921      |  |  |
| Collateralized mortgage-backed securities                          |  | -           |  | 4,522,409  |    | -   |    | 4,522,409       |  |  |
| Corporate bonds  |  | -           |  | 20,761,212 |    | -   |    | 20,761,212      |  |  |
| Corporate asset-backed securities                                  |  | -           |  | 5,272,715  |    | -   |    | 5,272,715       |  |  |
| Non-agency collateralized mortgage obligations                     |  | -           |  | 433,422    |    | -   |    | 433,422         |  |  |
| Municipals   |  | -           |  | 771,056    |    | -   |    | 771,056         |  |  |
| Total fixed income investments                                     |  | 9,275,992   |  | 45,637,735 |    | -   |    | 54,913,727      |  |  |
| Total investments by fair value level                              | \$   | 159,743,868 | \$   | 45,637,735 | \$ | -   | =  | 205,381,603     |  |  |
| Investments measured at the NAV practical expedient <sup>(a)</sup> |  |             |  |            |    |   |    | 446,763,172     |  |  |
| Investments measured at amortized cost <sup>(b)</sup>              |  |             |  |            |    |   |    | 20,365,076      |  |  |
| Total investments measured at fair value                           |  |             |  |            |    |   | \$ | 672,509,851     |  |  |

(a) Certain investments that were measured at net asset value ("NAV") per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the line items presented in the statements of net assets available for benefits.

#### **NOTES TO FINANCIAL STATEMENTS**

### (3) Fair value measurements (continued)

(b) The EB Temporary Investment Fund of The Bank of New York Mellon (the "Fund) values its investments on the basis of amortized cost which approximates fair value for the Fund as a whole. The amortized cost method involves valuing a security at cost on the date of purchase and thereafter at a constant dollar amortization to maturity of the difference between the principal amount due at maturity and the initial cost of the security. The use of amortized cost is subject to compliance with the Fund's amortized cost procedures as specified under The Bank of New York Mellon Employee Benefit Collective Investment Fund Plan.

The valuation method for investments measured at the net asset value per share, or equivalent, as of December 31, 2018 and 2017 are presented in the tables below.

|   |    | December 31,<br>2018 |             | Unfunded            | Redemption<br>Frequency    | Dadamatian                  |  |
|---|----|----------------------|-------------|---------------------|----------------------------|-----------------------------|--|
|   |    | ZU18<br>Fair Value   | Commitments |                     | (If Currently<br>Eligible) | Redemption<br>Notice Period |  |
| Investment Type                                       |    | raii vaiue           |             | Jillillitillelits_  | Liigibiej                  | Notice Feriou               |  |
| Equity commingled funds                               |    |                      |             |                     |                            |                             |  |
| Developed markets (1)                                 | \$ | 104,157,358          | \$          | _                   | Daily                      | 2 days                      |  |
| Emerging markets (1)                                  | Ψ  | 63,171,758           | Ψ           | _                   | Daily/Weekly               | 2 days                      |  |
| Fixed-income comingled funds                          |    | 00,171,700           |             |                     | Bully/Woolkly              | 2 dayo                      |  |
| High yield fixed income (1)                           |    | 17,469,725           |             | _                   | Daily                      | 2 days                      |  |
| International fixed income (1)                        |    | 30,098,964           |             | _                   | Daily                      | 10 days                     |  |
| Hedge fund of funds commingled funds (1)              |    | 34,545,430           |             | _                   | Quarterly                  | 90 - 100 days               |  |
| Private equity funds (2)                              |    | 30,956,507           |             | 47,765,185          | Not Eligible               | N/A                         |  |
| Multi-asset class commingled funds (1)                |    | 64,065,312           |             | -                   | Monthly                    | 15 days                     |  |
| Real estate commingled fund (3)                       |    | 24,533,680           |             | _                   | Quarterly                  | 45 - 60 Days                |  |
| Real estate (3)                                       |    | 35,285,736           |             | 14,951,568          | Not Eligible               | N/A                         |  |
| (-)   |    | ,,                   |             | ,,                  |                            |                             |  |
| Investments measured at the NAV practical expedient   | \$ | 404,284,470          |             |                     |                            |                             |  |
|   |    |                      |             |                     | Redemption                 |                             |  |
|   |    | December 31,         |             |                     | Frequency                  |                             |  |
|   |    | 2017                 |             | Unfunded            | (If Currently              | Redemption                  |  |
|   |    | Fair Value           | Co          | ommitments          | Eligible)                  | Notice Period               |  |
| Investment Type                                       |    |                      | _           |                     |                            |                             |  |
| Equity commingled funds                               |    |                      |             |                     |                            |                             |  |
| Developed markets (1)                                 | \$ | 123,063,195          | \$          | -                   | Twice a Month              | 2 days                      |  |
| Emerging markets (1)                                  |    | 82,161,043           |             | -                   | Daily/Weekly               | 2 days                      |  |
| Fixed-income comingled funds                          |    |                      |             |                     |                            |                             |  |
| High yield fixed income (1)                           |    | 17,979,851           |             | -                   | Daily                      | 2 days                      |  |
| International fixed income (1)                        |    | 31,604,923           |             | -                   | Daily                      | 2 days                      |  |
| Hedge fund of funds commingled funds (1)              |    | 46,621,895           |             | -                   | Quarterly                  | 90 - 100 days               |  |
| Private equity funds (2)                              |    | 25,437,896           |             | 2,919,000           | Not Eligible               | N/A                         |  |
| Commodities (1)                                       |    | 24 007 260           |             | _                   | Monthly                    | 5 days                      |  |
|   |    | 21,097,360           |             |                     |                            |                             |  |
| Global tactical asset allocation commingled funds (1) |    | 42,911,304           |             | -                   | Monthly                    | 15 days                     |  |
|   |    | , ,                  |             | -                   | ,                          |                             |  |
| Global tactical asset allocation commingled funds (1) |    | 42,911,304           |             | -<br>-<br>1,767,144 | Monthly                    | 15 days                     |  |

(1) Consists of two domestic equity funds, two international emerging market equity funds, two fixed income funds and two hedge fund of funds, two multi-asset class funds that are considered commingled in nature. Each are valued at the net asset value of the units held at the end of the period based upon the fair value of the underlying investments.

#### **NOTES TO FINANCIAL STATEMENTS**

### (3) <u>Fair value measurements</u> (continued)

- (2) The Retirement System's private equity portfolio consists of 285 active partnerships with the funds-of-funds investments, which invests primarily in buyout funds, with exposure to venture capital, special situations, growth equity and supplemented by secondary and co-investment opportunities. The fair values of the fund-to-funds have been determined using net assets valued one quarter in arrears plus current quarter cash flows. These funds are not eligible for redemption. Distributions are received as underlying investments within the funds are liquidated, which on average can occur over the span of the next 1 to 7 years.
- (3) For real estate and real estate commingled funds, investments generally valued using one or a contribution of the following accepted valuation approaches: market, cost or income. For four of the real estate funds, generally annual appraisals are performed by an independent third-party each year, minimum every three years. For four of the real estate funds, the inputs and assumptions utilized to estimate future cash flows are based upon the manger's evaluation of the economy, capital markets, market trends, operating results, and other factors, including judgments regarding occupancy rates, rental rates, inflation rates, and capitalization rates utilized to estimate the projected cash flows at disposition and discount rates. All portfolios have audited financials completed at fiscal year-end.

### (4) Property and equipment

Property and equipment consisted of the following at December 31, 2018 and 2017:

|                                | December 31, |             |    |             |  |  |  |  |  |  |  |
|--------------------------------|--------------|-------------|----|-------------|--|--|--|--|--|--|--|
|                                |              | 2018        |    | 2017        |  |  |  |  |  |  |  |
| Cost                           |              |             |    |             |  |  |  |  |  |  |  |
| Equipment                      | \$           | 42,675      | \$ | 42,675      |  |  |  |  |  |  |  |
| Software                       |              | 2,230,382   |    | 2,223,908   |  |  |  |  |  |  |  |
| Total cost                     |              | 2,273,057   |    | 2,266,583   |  |  |  |  |  |  |  |
| Less: accumulated depreciation |              | (2,245,350) |    | (2,228,200) |  |  |  |  |  |  |  |
|                                |              |             |    |             |  |  |  |  |  |  |  |
| Net property and equipment     | \$           | 27,707      | \$ | 38,383      |  |  |  |  |  |  |  |

Depreciation expense for the years ended December 31, 2018 and 2017 was \$17,150 and \$15,855, respectively.

#### (5) Funding policy

The Missouri Revised Statutes Sections 169.350.4 and 169.291.16 specify that for 2014 and each subsequent year, the employee contribution rate and the employer contribution rate shall be the same percentage of compensation, each not less than 7.5% of compensation not more than 9% compensation. Within this permitted range, the rate may be changed (increased or decreased) in increments of 0.5% each year. The objective is that the combined employee and employer contribution will be the amount actuarially required to cover the normal cost and amortize the unfunded accrued actuarial liability over a period that does not exceed 30 years from the date of valuation. The rate for each calendar year shall be certified by the Board of Trustees to the employers at least six months prior to the date such rate is to be effective. Effective January 1, 2019, the 2018 Missouri General Assembly passed a bill that increased the employer contribution rate (see Notes 1 and 10).

#### **NOTES TO FINANCIAL STATEMENTS**

#### (6) Net pension liability

The components of the net pension liability of participating entities at December 31, 2018 and 2017, were as follows:

|                                       | <br>2018            | <br>2017          |
|---------------------------------------|---------------------|-------------------|
| Total pension liability               | \$<br>1,002,969,710 | \$<br>989,536,742 |
| Less: plan fiduciary net position     | 602,762,479         | 685,801,999       |
| Net pension liability                 | \$<br>400,207,231   | \$<br>303,734,743 |
| Plan fiduciary net position as a      |                     |                   |
| percentage of total pension liability | 60.10%              | 69.31%            |

**Actuarial information -** The Retirement System engages an independent actuarial firm to perform an annual actuarial valuation. The total pension liability was determined by an actuarial valuation as of January 1, 2018, which was rolled forward to December 31, 2018. The actuarial assumptions used for the most recent valuations are as follows:

Valuation Date
Actuarial Cost Method
Amortization Method
Remaining Amortization Period
Asset Valuation Method
Actuarial Assumptions:
Investment Rate of Return
Projected Salary Increases
Inflation

Mortality:

January 1, 2018 and 2017 Entry Age Normal Level Percent of Pay, Closed Period 29 years (2018), 30 years (2017) 5-year Smoothed Fair Value

7.75%, including inflation 5.00%, including inflation 2.75%

Pre-retirement mortality rates were based on RP-2014 Healthy Non-Annuitant Blue Collar Table with a one-year setback for females, projected 15 years from the valuation date using Scale MP-2016. Post-retirement mortality rates were based on RP-2014 Healthy Annuitant Blue Collar Table with a one-year setback for females, projected 7 years from the valuation date using Scale MP-2016. Disability mortality rates were based on RP-2014 Disabled Table for Males and Females.

#### **NOTES TO FINANCIAL STATEMENTS**

### (6) Net pension liability (continued)

The actuarial assumptions used in the January 1, 2018 and 2017 valuation were adopted by the Board from the results of an actuarial experience study covering the five-year period ended December 31, 2015 (dated October 3, 2016).

The long-term expected rate of return on pension plan investments is reviewed as part of the regular experience study prepared by the Retirement System. Several factors are considered in evaluating the long-term rate of return assumption, including long-term historical data, estimates inherent in current market data, and an analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation), along with estimates of variability and correlations for each asset class, were developed by the Retirement System's investment consultant. These ranges are combined to produce the 10-year long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the Retirement System's target asset allocation as of December 31, 2018 (see the discussion of the pension plan's investment policy) are summarized in the following table:

|                                  | 10-Year Long-term Expected Real Rate |
|----------------------------------|--------------------------------------|
| Asset Class                      | of Return                            |
| Private Equity                   | 11.5 %                               |
| International Emerging Equity    | 9.9 %                                |
| International Developed Equity   | 7.5 %                                |
| US Equity                        | 6.8 %                                |
| High Yield                       | 5.0 %                                |
| Real Estate                      | 4.6 %                                |
| Commodities                      | 4.3 %                                |
| Global Tactical Asset Allocation | 4.2 %                                |
| Hedge Funds of Funds             | 3.8 %                                |
| Core Fixed Income                | 1.8 %                                |

#### **NOTES TO FINANCIAL STATEMENTS**

### (6) <u>Net pension liability</u> (continued)

**Discount Rate** - The discount rate used to measure the total pension liability as of December 31, 2018 and 2017 was 7.57% and 7.75%, respectively. The projection of cash flows used to determine the discount rate assumed that contributions from the Plan members will be made at the current contribution rate and that contributions from employers will be made at contractually required rates, actuarially determined. Based on those assumptions, the Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current Plan members. Therefore, the long-term expected rate of return on Plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate - The following represents the net pension liability of participating entities as of December 31, 2018 and 2017, calculated using the discount rate assumption, as well as what the net pension liability would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current assumption.

|                   | 1% Decrease   | <b>Current Assumption</b> | 1% Increase   |
|-------------------|---------------|---------------------------|---------------|
| December 31, 2017 | 6.75%         | 7.75%                     | 8.75%         |
|                   | \$401,049,071 | \$303,734,744             | \$221,067,453 |
| December 31, 2018 | 6.57%         | 7.57%                     | 8.57%         |
|                   | \$499,599,319 | \$400,207,231             | \$316,062,190 |

### (7) Operating lease

The Retirement System entered into an office lease agreement commencing on April of 2016 and expiring on February 2026. Minimum rent payments under non-cancellable operating leases which extend for periods greater than one year are as follows:

| Years Ending December 31, |    |         |
|---------------------------|----|---------|
| 2040                      | •  | 70.000  |
| 2019                      | \$ | 73,036  |
| 2020                      |    | 73,011  |
| 2021                      |    | 74,823  |
| 2022                      |    | 75,125  |
| 2023                      |    | 75,125  |
| Thereafter                |    | 153,576 |
| Total                     | \$ | 524,696 |

## (8) <u>Tax status</u>

The Retirement System is exempt from federal income tax under Section 501 of the Internal Revenue Code.

#### **NOTES TO FINANCIAL STATEMENTS**

### (9) Risks and uncertainties

The Plan invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market, and credit risk. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such changes could materially affect the amounts reported in the statements of plan net assets.

Plan contributions are made and the actuarial present value of accumulated plan benefits are reported based on certain assumptions pertaining to interest rates, inflation rates and employee demographics, all of which are subject to change. Due to uncertainties inherent in the estimation and assumption process, it is at least reasonably possible that changes in these estimates and assumptions in the near term would be material to the financial statements.

Changes in the discount rate and investment returns can have a significant effect on the funded status of the Plan. Management continues to monitor these changes and the potential impact on the future pension plan funding requirements and related expenses.

#### (10) Subsequent events

The Retirement System has evaluated subsequent events through June 6, 2019, which is the date the financial statements were available to be issued and noted the following item for disclosure:

The 2018 Missouri General Assembly passed a bill that increased the employer contribution rate to 10.50% of pay, effective January 1, 2019, and then to 12% of pay, effective January 1, 2020. Beginning July 1, 2021, the employer contribution rate will be the greater of (1) the actuarial required contribution rate less the member contribution rate, or (2) 12.00% of pay, until the Retirement System is fully funded. Once the Retirement System is fully funded, the employer contribution rate may increase or decrease, in subsequent years, depending on valuation results and the employee contribution rate may decrease from 9% depending on valuation results. However, such changes are subject to statutory limitations. These changes to the contribution rate are expected to improve the funding status of the Retirement System in the future.



## REQUIRED SUPPLEMENTARY INFORMATION

## SCHEDULES OF CHANGES IN NET PENSION LIABILITY (\$ IN THOUSANDS)

|  | 2018 |   |    |  |    | 2016   | <br>2015   |    | 2014   |
|--|------|---|----|--|----|--|--|----|--|
| Total Pension Liability  |      |   |    |  |    |  | <br>   |    |  |
| Service cost Interest Benefit term changes Differences between expected and actual experience Assumption Changes   | \$   | 16,983<br>73,517<br>-<br>(11,652)<br>18,004                             | \$ | 18,683<br>68,868<br>-<br>4,918<br>77,882                             | \$ | 17,413<br>68,599<br>(64)<br>(2,897)<br>1,268                         | \$<br>16,690<br>67,219<br>-<br>12,010<br>1,224                                 | \$ | 15,418<br>66,956<br>-<br>-   |
| Benefit payments, including member refunds   | _    | (83,419)  |    | (81,763)   |    | (80,169)   | <br>(79,634)   |    | (78,536)   |
| Net change in total pension liability  |      | 13,433  |    | 88,588   |    | 4,150  | 17,509   |    | 3,838  |
| Total pension liability - beginning  | _    | 989,536   |    | 900,948  |    | 896,798  | <br>879,289  |    | 875,451  |
| Total pension liability - ending   | \$   | 1,002,969   | \$ | 989,536  | \$ | 900,948  | \$<br>896,798  | \$ | 879,289  |
| Plan Fiduciary Net Position  |      |   |    |  |    |  |  |    |  |
| Contributions:     Employer     Employee Net investment income (loss) Benefit payments, including member refunds Administrative expenses Other Net change in plan fiduciary net position | \$   | 17,528<br>17,619<br>(33,251)<br>(83,419)<br>(1,500)<br>(17)<br>(83,040) | \$ | 16,927<br>16,964<br>103,768<br>(81,763)<br>(1,521)<br>(16)<br>54,359 | \$ | 16,280<br>16,528<br>44,338<br>(80,169)<br>(1,552)<br>(92)<br>(4,667) | \$<br>14,499<br>14,646<br>(10,025)<br>(79,634)<br>(1,648)<br>(251)<br>(62,413) | \$ | 13,288<br>13,358<br>25,937<br>(78,536)<br>(1,548)<br>(529)<br>(28,030) |
| Plan fiduciary net position - beginning  |      | 685,802   |    | 631,443  |    | 636,110  | <br>698,523  |    | 726,553  |
| Plan fiduciary net position - ending   |      | 602,762   |    | 685,802  |    | 631,443  | <br>636,110  | _  | 698,523  |
| Net pension liability - ending   | \$   | 400,207   | \$ | 303,734  | \$ | 269,505  | \$<br>260,688  | \$ | 180,766  |
| Plan fiduciary net position as a percentage of the total pension liability   |      | 60.10%  |    | 69.31%   |    | 70.09%   | 70.93%   |    | 79.44%   |
| Covered payroll  | \$   | 194,754   | \$ | 188,073  | \$ | 180,893  | \$<br>170,580  | \$ | 166,102  |
| Employers' Net Pension Liability as a percentage of covered payroll  |      | 205.49%   |    | 161.50%  |    | 148.99%  | 152.82%  |    | 108.83%  |

Note to Schedule:

This schedule is intended to show 10-year trend. Additional years will be reported as they become available.

### **REQUIRED SUPPLEMENTARY INFORMATION**

# SCHEDULES OF NET PENSION LIABILITY (\$ IN THOUSANDS)

| Year<br>Ended | Total<br>Pension<br>bility (TPL)<br>(a) | Plan<br>iduciary<br>t Position<br>(b) | Net<br>Pension<br>bility (NPL)<br>(a-b) | Plan Fiduciary<br>Net Position<br>as a % of TPL<br>(b/a) | Covered<br>Employee<br>Payroll<br>(c) | Employers' NPL<br>as a % of<br>Covered Payroll<br>((b-a)/c) |
|---------------|---|---------------------------------------|---|--|---------------------------------------|---|
| 12/31/2018    | \$<br>1,002,969                         | \$<br>602,762                         | \$<br>400,207                           | 60.10%   | \$ 194,754                            | 205.49%   |
| 12/31/2017    | \$<br>989,536                           | \$<br>685,802                         | \$<br>303,734                           | 69.31%   | \$ 188,073                            | 161.50%   |
| 12/31/2016    | \$<br>900,948                           | \$<br>631,443                         | \$<br>269,505                           | 70.09%   | \$ 180,893                            | 148.99%   |
| 12/31/2015    | \$<br>896,798                           | \$<br>636,110                         | \$<br>260,688                           | 70.93%   | \$ 170,580                            | 152.82%   |
| 12/31/2014    | \$<br>879,289                           | \$<br>698,523                         | \$<br>180,766                           | 79.44%   | \$ 166,102                            | 108.83%   |

### **REQUIRED SUPPLEMENTARY INFORMATION**

## SCHEDULES OF EMPLOYERS' CONTRIBUTIONS (\$ IN THOUSANDS)

|   | <br>2018      | _  | 2017    | <br>2016      |    | 2015    |    | 2014    |    | 2013    |    | 2012    |    | 2011    |    | 2010    |    | 2009     |  |
|---|---------------|----|---------|---------------|----|---------|----|---------|----|---------|----|---------|----|---------|----|---------|----|----------|--|
| Actuarially determined employer contribution                      | \$<br>19,125  | \$ | 18,074  | \$<br>20,224  | \$ | 18,886  | \$ | 19,401  | \$ | 20,995  | \$ | 16,373  | \$ | 11,398  | \$ | 7,084   | \$ | 3,818    |  |
| Actual employer contributions                                     | 17,528        |    | 16,927  | 16,280        |    | 14,499  | _  | 13,288  |    | 12,094  |    | 11,370  |    | 11,973  |    | 13,282  |    | 27,657   |  |
| Annual contribution deficiency (excess)                           | \$<br>1,597   | \$ | 1,147   | \$<br>3,944   | \$ | 4,387   | \$ | 6,113   | \$ | 8,901   | \$ | 5,003   | \$ | (575)   | \$ | (6,198) | \$ | (23,839) |  |
| Covered-employee payroli*   | \$<br>194,754 | \$ | 188,073 | \$<br>180,893 | \$ | 170,492 | \$ | 166,102 | \$ | 161,253 | \$ | 151,603 | \$ | 159,637 | \$ | 177,093 | \$ | 206,384  |  |
| Actual contributions as a percentage of covered-employee payroll* | 9.00%         |    | 9.00%   | 9.00%         |    | 8.50%   |    | 8.00%   |    | 7.50%   |    | 7.50%   |    | 7.50%   |    | 7.50%   |    | 13.40%   |  |

<sup>\*</sup>Covered-employee payroll based upon the pensionable payroll reported to the Plan and excludes additional compensation amounts that may need to be reported by the employer.

### REQUIRED SUPPLEMENTARY INFORMATION

#### SCHEDULES OF INVESTMENT RETURNS

|  | 2018    | 2017   | 2016  | 2015   | 2014  | 2013   | 2012   | 2011  | 2010   | 2009   |
|--|---------|--------|-------|--------|-------|--------|--------|-------|--------|--------|
| Annual time-weighted rate of return, net of investment expense | (5.40%) | 17.29% | 8.07% | -1.45% | 3.64% | 12.43% | 12.96% | 0.64% | 13.35% | 15.93% |

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## Notes to Required Supplementary Information For the Year Ended December 31, 2018

Changes of benefit terms. The following change to the plan provisions was reflected in the valuation performed as of January 1, 2018:

The 2018 Missouri General Assembly passed a bill that changed the Retirement System's contribution policy beginning January 1, 2019 with respect to employers covered by the Retirement System. In accordance with the new legislation, the employer contribution rate will increase to 10.50% of pay effective January 1, 2019 and 12.00% of pay effective January 1, 2020. Beginning July 1, 2021, the employer contribution rate will be the greater of (1) the actuarial required contribution rate, as determined in the valuation prepared for the prior calendar year, less the member contribution rate, or (2) 12.00% of pay, until the Retirement System is fully funded. Once the Retirement System is fully funded, the employer contribution rate may increase or decrease in subsequent years, depending on the valuation results and the employee contribution rate may decrease from 9.00% depending on valuation results. However, such changes are subject to statutory limitations.

Changes of assumptions. In 2018, the non-disabled mortality tables were updated to reflect an additional year of mortality improvements.

Method and assumptions used in calculations of actuarially determined contributions. The Retirement System is funded with fixed contribution rates for members and employers. The actuarially determined contributions in the Schedule of Employer Contributions are calculated as of the beginning of the fiscal year in which contributions are reported. The following actuarial methods and assumptions were used to determine the employer Actuarially Determined Contribution reported in the most recent actuarial valuation (January 1, 2018):

Actuarial Cost Method Entry Age Normal

Amortization Method Level Percent of Pay, Closed Period

Remaining Amortization Period 30 years

Asset Valuation Method 5-year Smoothed Fair Value Investment Rate of Return 7.75%, including inflation Projected Salary Increases 5.00%, including inflation

Inflation 2.75%