

**EMPLOYEES RETIREMENT SYSTEM
OF THE CITY OF ST. LOUIS**

FINANCIAL STATEMENTS

September 30, 2018 and 2017

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

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Independent Auditors' Report

The Board of Trustees
Employees Retirement System of the City of St. Louis
St. Louis, Missouri

We have audited the accompanying financial statements of the Employees Retirement System of the City of St. Louis (the System), a Pension Trust Fund of the City of St. Louis, Missouri, which comprise the statements of fiduciary net position as of September 30, 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.

Management's Responsibility for the Financial Statements

The System's 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 of 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 System'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 System'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 Employees Retirement System of the City of St. Louis as of September 30, 2018 and 2017, and the changes in its fiduciary net position for the years then ended, in accordance with accounting principles generally accepted in the United States of America.

Other Matters

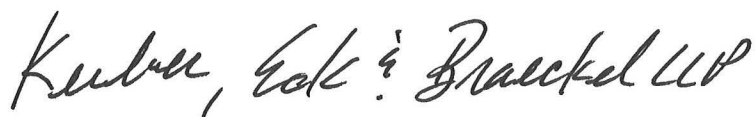
Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and other required supplementary information, as listed in the table of contents, be presented to supplement the 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 the 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 audit 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 audit was conducted for the purpose of forming an opinion on the System's financial statements as a whole. The Additional Financial Information, as listed in the table of contents, is presented for the purpose of additional analysis and is not a required part of the System's financial statements. Such information is the responsibility of the System's management and was derived from and relates directly to the underlying accounting and other records used to prepare the System's financial statements. The information has been subjected to the auditing procedures applied in the audit of the System's financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

St. Louis, Missouri
February 25, 2019



EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

MANAGEMENT'S DISCUSSION AND ANALYSIS - UNAUDITED

The following Management's Discussion and Analysis of the Employees Retirement System of the City of St. Louis (the System) provides an overview of the System's financial activities for the fiscal years ended September 30, 2018 and 2017. This section should be read in conjunction with the System's financial statements and supplementary information.

Financial Highlights

The System's investments earned 6.75% for the fiscal year. All market classes posted positive returns for the fiscal year. Domestic equities led all sectors with a 17.9% return. Real estate continued its steady run with a 9.7% return. However, all other market segments experienced positive but smaller returns in an environment highlighted by rising interest rates and prospects of a global economic slowdown. Last year's return leader, international equities, came in at 1.5% for the year. Energy master limited partnerships and hedge funds returned 6.0% and 4.6%, respectively. The System's fiduciary net position increased \$10.4 million to \$827.4 million.

Pension and retirement benefits increased 5.1% or \$3.3 million to \$66.8 million. The number of retirees and beneficiaries receiving a monthly benefit increased 2.4% to 4,678. Administrative expenses increased to \$962,177 in the fiscal year included a one-time legal settlement of \$120,000 in the Tribune bankruptcy case. All employers are contributing at the rate specified by the actuary.

Financial Statements

The financial report of the System consists of two financial statements: the Statement of Fiduciary Net Position and the Statement of Changes in Fiduciary Net Position. The Statement of Fiduciary Net Position provides the detail of the System's assets and related liabilities other than benefit obligations. The net position of the System reflects the resources available for future benefit payments. The Statement of Changes in Fiduciary Net Position provides the details of the System's activity during the year that lead to the change in the plan's fiduciary net position from the prior year.

In addition to the financial statements, the financial report contains the notes to the financial statements and supplemental information. These provide additional information for use in analyzing the financial statements and actuarial information related to the funded status of the System.

Financial Analysis

Total assets at September 30, 2018 of \$828.0 million were comprised of cash, investments and receivables. Investments increased \$10.5 million or 1.3% to \$826.7 million. Receivables decreased by \$79,724 and consisted of employer contributions and interest and dividend income. Currency exchange contracts ended both FY 2018 and FY 2017 as a net receivable but showed a small decline. The System does not participate in a securities lending program with its master custodian, U.S. Bank.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

MANAGEMENT'S DISCUSSION AND ANALYSIS - UNAUDITED

Total liabilities at September 30, 2018 were \$858,873 and consisted of accounts payable and accrued expenses. The net increase in liabilities of \$143,348 is attributed to accrued investment management fees.

Net assets held in trust for pension benefits increased \$10.4 million to \$827.4 million.

	September 30,			Total change			
				Amount		Percentage	
	2018	2017	2016	2018	2017	2018	2017
Assets							
Cash	\$ 386,227	\$ 156,516	\$ 78,502	\$ 229,711	\$ 78,014	146.8%	99.4%
Receivables	846,933	926,657	881,785	(79,724)	44,872	-8.6%	5.1%
Investments	826,748,560	816,207,252	764,509,199	10,541,308	51,698,053	1.3%	6.8%
Securities lending collateral	-	-	2,201,107	-	(2,201,107)	0.0%	-100.0%
Total assets	827,981,720	817,290,425	767,670,593	10,691,295	49,619,832	1.3%	6.5%
Deferred outflows							
Currency exchange	232,286	340,750	33,914	(108,464)	306,836	-31.8%	100.0%
Total assets and deferred outflows	828,214,006	817,631,175	767,704,507	10,582,831	49,926,668	1.3%	6.5%
Liabilities							
Accounts payable	858,873	715,525	602,327	143,348	113,198	20.0%	18.8%
Securities lending collateral liability	-	-	2,201,107	-	(2,201,107)	0.0%	-100.0%
Total liabilities	858,873	715,525	2,803,434	143,348	(2,087,909)	20.0%	-74.5%
Net position held in trust for pension benefits	\$ 827,355,133	\$ 816,915,650	\$ 764,901,073	\$ 10,439,483	\$ 52,014,577	1.3%	6.8%

Additions to Fiduciary Net Position

The assets needed to finance retirement benefits are accumulated through the receipt of employer contributions, member purchases of creditable service and earnings on investments. Net investment income was \$48.8 million for the fiscal year. Overall investment performance slowed as the System experienced weaknesses in international equities and fixed income. Net investment income included custodial and investment management fees of \$5.7 million.

Employer contributions decreased \$421,098 or 1.4% in FY 2018, as the reduction in the recommended employer contribution rate was offset by an increase in pension wages. Member contributions were comprised entirely of purchase of creditable service by active members.

Deductions from Fiduciary Net Position

The major expenses of the System include the payment of pension benefits to retirees and beneficiaries and administrative expenses. Other expenses within retirement benefits include refunds of member contributions and pension service transfer payments to other public plans within the State of Missouri which have a portability agreement with the System. Service transfer payments were \$37,188 and there were no contribution refunds in FY 2018. Administrative expenses increased \$198,904 in FY 2018 largely due to the Tribune bankruptcy legal settlement.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

MANAGEMENT'S DISCUSSION AND ANALYSIS - UNAUDITED

	September 30,			Total change			
	2018	2017	2016	Amount change		Percentage	
				2018	2017	2018	2017
Additions							
Net investment income	\$ 48,770,991	\$ 86,394,236	\$ 66,460,934	\$ (37,623,245)	\$ 19,933,302	-43.5%	30.0%
Employer contributions	29,361,102	29,782,200	32,127,591	(421,098)	(2,345,391)	-1.4%	-7.3%
Member contributions	58,201	134,248	10,093	(76,047)	124,155	-56.6%	1230.1%
Total additions	78,190,294	116,310,684	98,598,618	(38,120,390)	\$ 17,712,066	-32.8%	18.0%
Deductions							
Retirement benefits	66,788,634	63,532,834	60,972,546	3,255,800	2,560,288	5.1%	4.2%
Administrative expenses	962,177	763,273	722,132	198,904	41,141	26.1%	5.7%
Total deductions	67,750,811	64,296,107	61,694,678	3,454,704	2,601,429	5.4%	4.2%
Changes in fiduciary net position	10,439,483	52,014,577	36,903,940	(41,575,094)	15,110,637	-79.9%	40.9%
Net position held in trust for pension benefits							
Beginning of year	816,915,650	764,901,073	727,997,133	52,014,577	36,903,940	6.8%	5.1%
End of year	\$ 827,355,133	\$ 816,915,650	\$ 764,901,073	\$ 10,439,483	\$ 52,014,577	1.3%	6.8%

Summary

The System's investments continued their growth for another year. However, the financial markets may be showing signs of an economic slowdown. Investment income and employer contributions still exceeded retirement benefits and administrative expenses in each year since 2010 except for FY 2015 and FY 2011. In those years the deficit was \$52.5 million in FY 2015 and \$7.5 million in FY 2011. The required employer rates recommended by the actuary are currently 12.36% for the City of St. Louis and 12.27% for the other participating employers for the period July 1, 2018 through June 30, 2019. The prior year's contribution rates were 12.22% and 12.13%, respectively. The dual contribution rates are a result of a legal settlement involving the Retirement System, the City of St. Louis and the other participating employers.

The System remains in a position to meet its current pension obligations, as confirmed by the recent actuarial valuation.

The System is a qualified governmental plan under Section 401(a) of the Internal Revenue Code.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

MANAGEMENT'S DISCUSSION AND ANALYSIS - UNAUDITED

Requests for Information

This financial report is designed to provide the Board of Trustees, our members and other users of our financial report with a general overview of the System's finances and to demonstrate the System's accountability for its funds. If you have any questions about this report or need additional financial information, contact:

The Employees Retirement System of the City of St. Louis
1114 Market Street, Suite 900
St. Louis, MO 63101

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

STATEMENTS OF FIDUCIARY NET POSITION

September 30,

	2018	2017
ASSETS		
Cash	\$ 386,227	\$ 156,516
Receivables		
Accrued interest receivable	593,126	581,245
Accrued dividend receivable	167,058	180,001
Employers contribution receivable	86,749	165,411
Total receivables	846,933	926,657
Investments at fair value		
Temporary cash investments	3,599,382	9,362,307
Fixed income securities	87,436,917	87,458,023
Common stocks	216,847,893	198,735,935
Managed master limited partnerships	79,234,688	76,567,189
Managed international equity funds	183,939,350	193,611,240
Real estate funds	89,869,705	88,420,092
Domestic bond funds	86,376,387	86,173,017
Managed hedge fund of funds	79,444,238	75,879,449
Total investments	826,748,560	816,207,252
Total assets	827,981,720	817,290,425
DEFERRED OUTFLOWS OF RESOURCES		
Receivable under forward		
foreign currency exchange contracts	232,286	340,750
Total deferred outflows of resources	232,286	340,750
LIABILITIES		
Accounts payable	858,873	715,525
Net position held in trust for pension benefits	\$ 827,355,133	\$ 816,915,650

See notes to the financial statements.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION

Year ended September 30,

	2018	2017
ADDITIONS		
Contributions		
Employer contributions	\$ 29,361,102	\$ 29,782,200
Member contributions	58,201	134,248
Total contributions	<u>29,419,303</u>	<u>29,916,448</u>
Investment activity		
Interest and dividends	9,899,808	10,385,239
Net appreciation in fair value of investments	44,615,306	81,436,665
	<u>54,515,114</u>	<u>91,821,904</u>
Less investment expenses	5,744,123	5,427,668
Net investment income	<u>48,770,991</u>	<u>86,394,236</u>
Total additions	78,190,294	116,310,684
DEDUCTIONS		
Retirement benefits	66,788,634	63,532,834
Administrative expenses	962,177	763,273
Total deductions	<u>67,750,811</u>	<u>64,296,107</u>
NET INCREASE IN NET POSITION	10,439,483	52,014,577
NET POSITION HELD IN TRUST FOR PENSION BENEFITS		
Beginning of year	<u>816,915,650</u>	<u>764,901,073</u>
End of year	<u><u>\$ 827,355,133</u></u>	<u><u>\$ 816,915,650</u></u>

See notes to the financial statements.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

NOTE 1 – DESCRIPTION OF PLAN

The following description of the Employees Retirement System of the City of St. Louis is provided for general information purposes only. Participants should refer to the *Employees Retirement System Handbook* for a more complete description of the System's provisions.

General

The System is a cost-sharing, multiple-employer, defined benefit public employees' retirement system for all non-uniformed employees of the City of St. Louis and certain other public entities funded by or providing services to residents of the City of St. Louis. These additional employee groups covered by the System are the employees of the St. Louis Public Library, the Art Museum of St. Louis, the St. Louis Zoological Park, the City of St. Louis Water Division, the Airport Authority, the City Mental Health Board, the Metropolitan Taxicab Commission, Tower Grove Park, the System, and civilian employees of the police department and police and fireman's retirement systems. The System became operative April 1, 1960 by municipal ordinance establishing the System under the authority of Senate Bill No. 329 of the 70th General Assembly of the State of Missouri. Responsibility for operation and administration of the System is vested in its Board of Trustees. The Board of Trustees consists of the Comptroller of the City of St. Louis, two members appointed by the Mayor of the City of St. Louis, two members elected by the membership of the System, and one member elected by the retired members of the System.

Membership

Membership consisted of the following at September 30,:

	<u>2018</u>	<u>2017</u>
Retirees and beneficiaries		
Currently receiving benefits	4,678	4,572
Terminated employees entitled to but not yet receiving benefits	2,512	2,499
Current employees		
Fully vested	3,572	3,587
Non-vested	<u>1,630</u>	<u>1,692</u>
Total membership	<u><u>12,392</u></u>	<u><u>12,350</u></u>

Benefits

The System provides for defined benefit payments for retirement, death, or disability to eligible employees or their beneficiaries based upon creditable service, final average compensation, and a benefit compensation base. Benefits vest to employees covered by the System after the employee has attained five years creditable service.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

Employees retire with full retirement benefits after the age of 65 or if an employee's age and creditable service combined equal or exceed 85 years. Employees may retire and receive a reduced benefit after age 60 with five years of creditable service, age 55 with at least 20 years of creditable service, or any age with 30 years of creditable service.

The monthly pension benefits of all retirees or their beneficiaries are adjusted according to the changes in the Consumer Price Index of the U.S. Department of Labor. Increases are limited each year, with total increases to retirees or their beneficiaries limited to 25%.

Contributions

Employer contribution rates are established annually by the Board of Trustees based on an actuarial study. The required employer contribution rate recommended by the actuary is currently 12.36% for the City of St. Louis and 12.27% for the other participating employers for the period July 2018 through June 2019. Previously the contribution rates were 12.22% and 12.13% for July 2017 through June 2018 and 12.51% and 12.43% for July 2016 through June 2017. The dual contribution rates are a result of a legal settlement involving the System, the City of St. Louis and the other participating employers.

Employees who became members of the System prior to October 14, 1977 and continued to make contributions may make voluntary contributions to the System equal to 3% of their compensation until the compensation equals the maximum annual taxable earnings under the Federal Social Security Act. Thereafter, employees may contribute 6% of their compensation for the remainder of the calendar year.

Funding Policy

The System's funding policy provides for periodic employer contributions at actuarially determined rates that, expressed as percentages of annual covered payroll, are sufficient to accumulate assets to pay benefits when due. If contributions are necessary, level percentage of payroll employer contribution rates are determined using the entry age normal actuarial cost method.

Subsequent Events

Management has evaluated subsequent events through February 25, 2019, the date which the financial statements were available to be issued, for possible recognition or disclosure in the financial statements.

On August 28, 2018, the Board of Trustees signed a redemption election for Entrust Capital Diversified Fund shares held by the system. This election is effective December 31, 2018. Proceeds from the redemption of the shares will be disbursed beginning with a significant distribution in January 2019. Additional proceeds will continue to be disbursed as the Fund's positions are executed. The fair value of this investment was \$34,800,270 as of September 30, 2018.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The following are the significant accounting policies followed by the System.

Basis of Accounting

The accompanying financial statements are prepared in accordance with accounting principles generally accepted in the United States of America as set forth by Governmental Accounting Standards Board (GASB).

The financial statements were prepared using the accrual basis of accounting except that retirement benefits are recorded when due to the beneficiary. Employee contributions are recognized as additions in the period in which employer payroll is paid. Administrative deductions are recorded when the corresponding liabilities are incurred, regardless of when payment is made.

Tax Status

The System has been determined to be exempt from federal income taxes under Section 115 of the Internal Revenue Code. In 2005, the System became a qualified retirement plan in accordance with Internal Revenue Service regulations.

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 certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

Investments

Investments are reported at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date and in the principal and most advantageous market for the asset or liability. See Note 4 for a discussion of fair value measurement. Security transactions and any resulting realized gains or losses are accounted for on a completed transaction basis.

Furniture and Equipment

Acquisitions of furniture and equipment are charged to administrative expense.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

Derivatives

The System currently retains Payden & Rygel Investment Counsel as a global fixed income investment manager. The System permits Payden & Rygel to utilize financial derivative instruments such as forwards, futures, and options. The use of these financial derivatives is defensive in nature; that is, used only to manage duration and foreign currency exposure and bond exposure. The System's investment policy requires that open currency exposure shall not exceed 10 percent of the global fixed income portfolio.

The System had receivables under forward foreign currency exchange contracts of \$232,286 and \$340,750 at September 30, 2018 and 2017, respectively.

The System utilizes forward contract hedging to reduce the volatility in foreign currencies. Hedging techniques are traditionally used to limit exposure to price fluctuations. Management recognizes that fluctuations in foreign currencies could have a negative effect on the System's financial statements. Accordingly, the System entered into forward contracts in order to hedge this exposure.

Reclassifications

Certain reclassifications have been made to the 2017 financial statement presentation to correspond to the current year's format. Total net position held in trust for pension benefits and net increase in net position are unchanged due to these reclassifications.

NOTE 3 – CASH AND INVESTMENTS

The System is authorized to invest in:

- Short-term securities with a maximum maturity of one year including institutional liquid assets, U.S. Treasury obligations, Federal Agency obligations, discount and interest-bearing notes from corporations, and certificates of deposit;
- Fixed income securities including:
 - U.S. government securities;
 - Non-U.S. government fixed income securities; and
 - Publicly-issued corporate bonds, debentures, notes, or other evidences of indebtedness assumed or guaranteed by corporations organized under the laws of the United States with ratings of "A" or better by Moody's Investors Service;
- Common stocks of corporations organized under the laws of the United States;
- Managed master limited partnerships composed primarily of domestic midstream or energy infrastructure publicly traded on U.S. equity exchanges;
- Common stocks of foreign corporations through separate accounts as commingled vehicles;
- Real estate through discretionary commingled vehicles;
- Hedge funds through either separate or commingled fund of funds vehicles.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

It is the System's current policy to invest in each of the asset classes as indicated below:

<u>Asset class</u>	<u>Target allocation</u>	<u>Long-term* expected real rate of return</u>
Large cap	19.00%	7.00%
Small cap	4.50%	7.30%
International large cap	17.30%	7.30%
Emerging markets	6.70%	8.50%
High yield	5.00%	6.00%
Master limited partnerships	7.50%	8.00%
Core fixed income	12.50%	4.00%
International fixed income	4.00%	3.80%
Core real estate	10.00%	6.80%
Treasury inflation protected securities	3.50%	3.80%
Hedge funds	10.00%	5.50%
	<u>100.00%</u>	<u>6.90%</u>

* *Geometric return*

The bank balances of the System at September 30, 2018 and 2017 were \$1,715,690 and \$1,516,637, respectively. These balances were insured by the Federal Deposit Insurance Corporation up to \$250,000. The remaining balances were collateralized by securities held by the pledging financial institution's trust department in the System's name.

All investments at September 30, 2018 and 2017 were held by the System's agent in the System's name.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

The 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 five percent or more of fiduciary net position at September 30,:

	2018	
Acadian Asset Management - Emerging Markets Mutual Equity Fund II	\$ 54,437,137	6.58%
Twin Capital Management - Domestic Equity	57,359,875	6.93%
PNC Capital Advisors - U.S. Broad Market Core Fixed Income	54,008,280	6.53%
Principal Global Investors - Real Estate Group Annuity Contract	89,869,705	10.86%
Silchester International Advisors - International Value Equity Group Trust	87,007,530	10.52%
Evanston Weatherlow Offshore - Hedge Fund	44,643,969	5.40%
LSV Asset Management - U.S. Large Cap Value Equity	43,844,415	5.30%
Walter Scott & Partners Limited Group Trust- International Equity Fund	42,494,682	5.14%
	2017	
Acadian Asset Management - Emerging Markets Mutual Equity Fund II	\$ 59,031,533	7.23%
Twin Capital Management - Domestic Equity	53,703,103	6.57%
PNC Capital Advisors - U.S. Broad Market Core Fixed Income	54,600,077	6.68%
Principal Global Investors - Real Estate Group Annuity Contract	88,420,093	10.82%
Silchester International Advisors - International Value Equity Group Trust	93,145,776	11.40%
Evanston Weatherlow Offshore - Hedge Fund	41,302,502	5.06%
Walter Scott & Partners Limited Group Trust- International Equity Fund	41,433,930	5.07%

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

Foreign Currency Risk

Foreign currency risk is the risk that the change in exchange rates will adversely impact the fair value of an investment. The System does not have a formal policy to limit foreign currency risk. The following table demonstrates the System's level of foreign currency exposure as of September 30,:

Currency	2018		
	Short-Term	Debt	Total
Japanese Yen	\$ 160,487	\$ 5,213,878	\$ 5,374,365
Euro	30,712	7,082,341	7,113,053
British Pound	(10,747)	2,393,415	2,382,668
Canadian Dollar	19,386	731,767	751,153
Danish Krone	5,292	69,217	74,509
Swiss Franc	(2,649)	-	(2,649)
Mexican Peso	19,018	103,799	122,817
Norwegian Krone	10,598	-	10,598
Australian Dollar	7,396	335,239	342,635
Indonesian Rupiah	(6,446)	-	(6,446)
South African Rand	(5,528)	-	(5,528)
Polish Zloty	7,320	58,295	65,615
Total	<u>\$ 234,839</u>	<u>\$ 15,987,951</u>	<u>\$ 16,222,790</u>

Currency	2017		
	Short-Term	Debt	Total
Japanese Yen	\$ 28,467	\$ 4,960,009	\$ 4,988,476
Euro	23,709	5,926,734	5,950,443
British Pound	37,966	1,880,091	1,918,057
Canadian Dollar	14,992	767,289	782,281
Danish Krone	4,132	71,197	75,329
Mexican Peso	16,435	109,453	125,888
Australian Dollar	4,855	360,686	365,541
Polish Zloty	6,035	59,770	65,805
Total	<u>\$ 136,591</u>	<u>\$ 14,135,229</u>	<u>\$ 14,271,820</u>

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

Credit Risk of Debt Securities

Credit risk is the risk that an issuer or other counter party to an investment will not fulfill its obligation to the System. Below is a list of fixed income credit quality ratings as of September 30,:

Quality rating	2018	2017
	Fair value	Fair Value
Aaa/U.S. Governments	\$ 84,465,914	\$ 80,328,518
Aa	6,976,267	6,702,413
A	25,022,849	25,984,121
Baa/BBB	23,537,036	31,990,408
Below Baa/BBB	32,523,941	27,685,912
Not rated	307,296	301,513
Total credit risk	<u>\$ 172,833,303</u>	<u>\$ 172,992,885</u>

Interest Rate Risk

The System does not have a formal policy to limit interest rate risk. Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. Duration is a measure of a debt instrument's exposure to a change in interest rates and the related sensitivity of market price to parallel shifts in the yield curve. It uses the present value of cash flows, weighted for those cash flows as a percentage of the instruments' full price. The following schedule provides a summary of interest risk assumed by the System as of September 30,:

Investment	2018		2017	
	Fair value	Effective duration	Fair value	Effective duration
Payden and Rygel	\$ 32,448,637	5.83 years	\$ 32,219,790	6.56 years
Allegiant (PNC)	54,008,280	6.36 years	54,600,077	6.49 years
SSGA	35,325,165	6.03 years	35,754,259	5.98 years
Loomis	30,729,606	3.60 years	30,151,313	4.23 years
Vanguard	20,321,615	7.40 years	20,267,446	8.00 years
Total interest rate risk	<u>\$ 172,833,303</u>		<u>\$ 172,992,885</u>	

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

NOTE 4 – INVESTMENTS AND DERIVATIVE INSTRUMENTS MEASURED AT FAIR VALUE

The System categorizes its fair value measurements within the fair value hierarchy established by accounting principles generally accepted in the United States of America. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

The System has the following recurring fair value measurements at September 30, 2018:

	<u>Total</u>	<u>Level 1</u>	<u>Level 2</u>	<u>Level 3</u>
Investments by fair value level				
Fixed income securities				
U.S. Government securities	\$ 23,744,120	\$ 20,804,249	\$ 2,939,871	\$ -
Corporate bonds	29,520,269	-	29,520,269	-
Domestic bond funds	5,700,414	5,700,414	-	-
International bonds and securities	32,071,496	2,222,943	29,848,553	-
Other debt obligations	20,321,615	20,321,615	-	-
Equity securities				
Common stocks	216,847,893	216,847,893	-	-
Managed master limited partnerships	47,646,145	47,646,145	-	-
Total investments by fair value level	375,851,952	<u>\$ 313,543,259</u>	<u>\$ 62,308,693</u>	<u>\$ -</u>
Investments measured at the net asset value (NAV)				
Loomis High Yield Conservative Trust (B)	30,729,606			
SSGA Passive Bond Market Index (NL) Fund	35,325,165			
Principal Real Estate Group Annuity Contract	89,869,706			
Acadian Emerging Markets Mutual Equity Fund II	54,437,137			
Kaboutier International Opportunities Fund II	31,588,543			
Silchester International Value Equity Group Trust	87,007,530			
Walter Scott Group Trust International Equity Fund	42,494,682			
Entrust Capital Diversified Fund	34,800,270			
Weatherlow Offshore Fund I	44,643,969			
Total investments measured at NAV	<u>450,896,608</u>			
Total investments measured at fair value	<u>\$ 826,748,560</u>			
Investment derivative instruments				
Foreign exchange contracts	<u>\$ 232,286</u>		<u>\$ 232,286</u>	

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

The System has the following recurring fair value measurements at September 30, 2017:

	Total	Level 1	Level 2	Level 3
Investments by fair value level				
Fixed income securities				
U.S. Government securities	\$ 23,427,866	\$ 20,388,612	\$ 3,039,254	\$ -
Corporate bonds	30,335,607	-	30,335,607	-
Domestic bond funds	11,406,226	11,406,226	-	-
International bonds and securities	31,650,630	1,630,402	30,020,228	-
Other debt obligations	20,267,446	20,267,446	-	-
Equity securities				
Common stocks	198,735,935	198,735,935	-	-
Managed master limited partnerships	44,792,227	44,792,227	-	-
Total investments by fair value level	360,615,937	<u>\$ 297,220,848</u>	<u>\$ 63,395,089</u>	<u>\$ -</u>
Investments measured at the net asset value (NAV)				
Loomis High Yield Conservative Trust (B)	30,151,313			
SSGA Passive Bond Market Index (NL) Fund	35,754,259			
Principal Real Estate Group Annuity Contract	88,420,093			
Acadian Emerging Markets Mutual Equity Fund II	59,031,533			
Kabouter International Opportunities Fund II	31,774,962			
Silchester International Value Equity Group Trust	93,145,776			
Walter Scott Group Trust International Equity Fund	41,433,930			
Entrust Capital Diversified Fund	34,576,947			
Weatherlow Offshore Fund I	41,302,502			
Total investments measured at NAV	<u>455,591,315</u>			
Total investments measured at fair value	<u>\$ 816,207,252</u>			
Investment derivative instruments				
Foreign exchange contracts	<u>\$ 340,750</u>		<u>\$ 340,750</u>	

The following is a description of the valuation methodologies used by the System to measure assets at estimated fair value. There were no changes in the methodologies used at September 30, 2018 and 2017.

Fixed income and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities.

Fixed income securities classified in Level 2 of the fair value hierarchy are valued using matrix pricing based on quotes from independent pricing services using recent trading activity information including market interest rate curves, dealer quotes, the U.S. Treasury yield curve and bond terms and conditions. Derivative instruments classified in Level 2 of the fair value hierarchy are valued using a market approach that considers foreign exchange rates.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

The valuation methods for investments measured at the net asset value (NAV) per share (or its equivalent) as provided by the investee entity or fund manager is presented on the following table.

	Fair value 2018	Fair value 2017	Unfunded commitments	Redemption frequency (if currently eligible)	Redemption notice period
Loomis High Yield Conservative Trust (B)	\$ 30,729,606	\$ 30,151,313	n/a	Daily	Daily
SSGA Passive Bond Market Index (NL) Fund	35,325,165	35,754,259	n/a	Monthly	15 days
Principal Real Estate Group Annuity Contract	89,869,706	88,420,093	n/a	Daily	7 days
Acadian Emerging Markets Mutual Equity Fund II	54,437,137	59,031,533	n/a	Daily	30 days
Kabouter International Opportunities Fund II	31,588,543	31,774,962	n/a	Daily	15 - 30 days
Silchester International Value Equity Group Trust	87,007,530	93,145,776	n/a	Monthly	5 - 10 days
Walter Scott Group Trust International Equity Fund	42,494,682	41,433,930	n/a	Daily	10 days
Entrust Capital Diversified Fund	34,800,270	34,576,947	n/a	Quarterly	90 days
Weatherlow Offshore Fund I	44,643,969	41,302,502	n/a	Quarterly	65 days
Total investments measured at NAV	<u>\$450,896,608</u>	<u>\$455,591,315</u>			

Loomis High Yield Conservative Trust (B). The fund may invest up to 100% of its market value in fixed income securities of any credit quality, including lower rated fixed income securities and up to 20% of its market value in non-U.S. currencies. The fund may also invest in fixed income securities of any maturity. The fair values of the investments in this fund have been determined using the NAV per share (or its equivalent) of the underlying investments.

State Street Global Advisors Passive Bond Market Index (NL) Fund. The investment objective of the fund is to approximate as closely as practicable, before expenses, the performance of the Barclays U.S. Aggregate Bond Index over the long term. The fund attempts to achieve its investment objective by investing in other collective investment funds, each an underlying fund, managed by the Trustee, which have characteristics consistent with the fund's overall investment objective. The fair values of the investments in this fund have been determined using the NAV per share (or its equivalent) of the underlying investments.

Principal Global Investors Real Estate Group Annuity Contract. Is a pooled separate account for investment and reinvestment in owned real estate, such as office buildings, industrial buildings, shopping centers, retail stores and similar property and in accordance with applicable law. The fair values of the investments in this fund have been determined using the NAV per share (or its equivalent) of the underlying investments as reported by the fund manager. The fund reserves the right to defer payments that would exceed the amount of cash and other liquid assets held by the fund, reduced by amounts committed to purchase properties or needed for operating expenses. The fund will not defer requested payments for longer than three years.

Acadian Emerging Markets Mutual Equity Fund II. The fund's objective is to seek long-term capital appreciation by investing primarily in common stocks of emerging markets issuers. The fair values of the investments in this fund have been determined using the NAV per share (or its equivalent) of the underlying investments.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

Kabouter International Opportunities Fund II. The primary purpose of the fund is to provide diversification while still providing the opportunity for capital appreciation. A low correlation between stocks, bonds, hedge funds, and real estate creates reduced portfolio volatility. The fair values of the investments in this fund have been determined using the NAV per share (or its equivalent) of the underlying investments.

Silchester International Value Equity Group Trust. The trust principally invests in a diversified portfolio of equity securities of companies ordinarily incorporated in any country other than the United States. The fair values of the investments in this fund have been determined using the NAV per share (or its equivalent) of the underlying investments. The trust may delay payment if the investment manager determines that such delay is reasonably necessary to prevent such redemption from having a material adverse impact on the group trust and/or the remaining participating trusts.

Walter Scott Group Trust International Equity Fund. The investment manager is authorized to allocate the assets without limitation among geographic regions and individual countries (other than the United States) based on its analysis of global economic, political and financial conditions. Not more than 5% of the fund's assets shall be invested in stocks domiciled or listed on exchanges in countries not included in the MSCI World index other than Canada, the republic of South Africa and Chinese stocks listed on the Hong Kong exchange. The fair values of the investments in this fund have been determined using the NAV per share (or its equivalent) of the underlying investments. Under certain circumstances (including the inability of a fund to liquidate positions or the default or delay in payments due to a fund from brokers, banks, or other persons), a fund may delay payment to an investor requesting redemption of the proportionate part of the NAV of the units being redeemed which represents sums which are the subject of such default or delay, or the fund may distribute property in kind as determined by the investment manager in payment of a redemption of units.

Entrust Capital Diversified Fund. The Fund seeks to achieve above-average rates of return and long-term capital growth. The Fund seeks to achieve this objective by employing a multi-manager approach, maintaining investments through private investment entities and/or separately managed accounts with a broadly diversified group of investment management professionals specializing in alternative investment strategies. The Fund does not follow a rigid asset allocation policy but seeks diversification through a combination of managers trading a range of strategies, including but not limited to, hedging, distressed securities, arbitrage, and special situations. The fair values of the investments in this fund have been determined using the NAV per share (or its equivalent) of the underlying investments. See Note 1 (subsequent event) for details of redemption of this investment.

Weatherlow Offshore Fund I. The fund's investment objective is to achieve long-term returns commensurate with long term returns from a portfolio invested in the general equity markets, while experiencing volatility more like that of a portfolio invested in the general debt markets. The fund seeks to achieve this objective by investing predominantly in interests in portfolio funds - i.e., limited partnerships and similar pooled invested vehicles often referred to as "hedge funds" - managed by portfolio managers. The fair values of the investments in this fund have been determined using the NAV per share (or its equivalent) of the underlying investments.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

NOTE 5 – PLAN TERMINATION

The System is administered in accordance with the provisions of the Revised Code of the City of St. Louis. There are currently no plans to terminate the System.

NOTE 6 – DEFERRED RETIREMENT OPTION PLAN

On June 8, 2000, the Mayor of the City of St. Louis approved an ordinance passed by the Board of Alderman, authorizing a Deferred Retirement Option Plan (DROP), which became effective January 1, 2001. This plan allows for members to work for an additional 5 years after reaching retirement age and defer receipt of their retirement allowance. The calculation of average salary for retirement benefits will not include the additional years of service after normal retirement age. The amount that would have been received as retirement benefit is put in a special DROP account monthly. Total DROP expense was \$10,452,710 and \$10,010,958 for the years ended September 30, 2018 and 2017, respectively. The DROP account will not be adjusted for cost of living increases.

The DROP account earns interest at the actuarial valuation rate of return and at the 10-year U.S. Treasury Bond yield as of each September 30, for DROP participants enrolling February 1, 2003 and thereafter.

After a member completely terminates employment, the member can withdraw amounts from the DROP account in a lump sum or according to a deferred retirement payment plan. At September 30, 2018 and 2017, approximately 768 and 798 members, respectively, have elected DROP participation and have DROP account balances of approximately \$48,845,013 and \$50,902,700, respectively.

NOTE 7 – COMMITMENTS AND CONTINGENCIES

During the year ended September 30, 2017, the System, the members of its Board of Trustees and the City of St. Louis were served with an Amended Petition by a city employee, who alleges that in December, 1988 the System's Board of Trustees wrongfully adopted a resolution determining that certain City of St. Louis elected positions could no longer be a member of the System. The plaintiff asserts the Board resolution violates a state statute which would allow certain elected positions to receive pension benefits from both the statewide and local plans. Subsequent to the original filing of the petition, another plaintiff joined the suit. The petitioners are seeking payment of the pension benefits believed due to them. The System has made a claim for indemnification and defense from its fiduciary insurer and engaged Bryan Cave, LLP (with the permission of its fiduciary insurer) to vigorously defend the System and the members of its Board of Trustees. It is important to note that the System did not receive any employer contributions attributable to the petitioners' compensation after the date of the resolution of the Board of Trustees and the System filed a counterclaim against the City of St. Louis averring that in the event the System is liable to the petitioners, the City of St. Louis owes the System the employer contributions (plus interest) attributable to the petitioners' compensation while serving the City in the elected positions by the City. On February 22, 2019, the court ruled in favor of the System on all claims made by the petitioners, however, this case is still open to appeal.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

NOTE 8 – ACTUARIAL METHODS AND SIGNIFICANT ASSUMPTIONS

Valuation date	October 1, 2018 and 2017
Timing	Actuarially determined contribution rates are calculated based on the actuarial valuation at the beginning of the year
Actuarial cost method	Entry age normal
Asset valuation method	5 year smoothing
Amortization method	Layered 20 year amortization of unfunded liability
Discount rate	7.50%
Inflation	2.50%
Salary increases	Varies by service, ranging from 3.00% to 4.25%
Mortality	Healthy: RP-2000 Healthy Mortality 3-year set-forward with generational projections using Scale AA Disabled: RP-2000 Disabled Mortality 3-year set-forward with generational projections using Scale AA

A single discount rate of 7.50% was used to measure the pension liability. This single discount rate was based on the expected rate of return on the System's investments of 7.50%. This single discount rate is net of investment expenses (investment manager and custodial fees). The projection of cash flows used to determine this single discount rate assumed the City of St. Louis and other participating employers would make the required contributions as defined by Statute. Based on these assumptions, the System's fiduciary net position was projected to be available to make all projected future benefit payments of current members and their beneficiaries. Therefore, the long-term expected rate of return on the System's investments was applied to all periods of projected benefit payments to determine the total pension liability.

GASB 67 requires the disclosure of the sensitivity of the net pension liability to changes in the discount rate. For calculations of total pension liability, the actuary has used an assumed long-term expected rate of return of 7.50%. The table below presents the net pension liability if the discount rate were 1% lower or 1% higher than the current rate.

	1% decrease 6.50%	Current discount rate 7.50%	1% increase 8.50%
Total pension liability	\$ 1,094,941,170	\$ 996,543,282	\$ 912,320,738
Fiduciary net position	<u>827,355,133</u>	<u>827,355,133</u>	<u>827,355,133</u>
Net pension liability	<u>\$ 267,586,037</u>	<u>\$ 169,188,149</u>	<u>\$ 84,965,605</u>
System fiduciary net position as a percentage of total pension liability	75.6%	83.0%	90.7%

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE FINANCIAL STATEMENTS

NOTE 9 – RISKS AND UNCERTAINTIES

The System invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market, foreign currency, regulatory, and credit risks. 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 such changes could materially affect the amounts reported in the statements of fiduciary net position.

Total pension liability is 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 estimations and assumptions 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.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

SCHEDULE OF CHANGES IN EMPLOYER NET PENSION LIABILITY - UNAUDITED

September 30,

	2018	2017	2016	2015	2014
Total pension liability					
Service cost	\$ 13,342,936	\$ 13,185,412	\$ 13,703,072	\$ 13,067,553	\$ 10,591,910
Interest	72,329,296	71,206,835	69,893,488	73,825,307	72,012,146
Difference between expected and actual experience	(12,970,671)	(4,372,137)	(3,601,576)	(2,701,109)	(3,664,735)
Change of assumptions	-	-	-	(5,107,330)	-
Benefit payments	(66,788,634)	(63,532,834)	(60,972,546)	(59,065,812)	(56,317,073)
Net change in total pension liability	5,912,927	16,487,276	19,022,438	20,018,609	22,622,248
Total pension liability, beginning	990,630,355	974,143,079	955,120,641	935,102,032	912,479,784
Total pension liability, ending (a)	996,543,282	990,630,355	974,143,079	955,120,641	935,102,032
Plan fiduciary net position					
Employer contributions	29,361,102	29,782,200	32,127,591	35,436,141	36,788,260
Member contributions	58,201	134,248	10,093	289,810	129,164
Net investment income	48,770,991	86,394,236	66,460,934	(28,435,882)	70,076,027
Benefit payments	(66,788,634)	(63,532,834)	(60,972,546)	(59,065,812)	(56,317,073)
Administrative expenses	(962,177)	(763,273)	(722,132)	(722,758)	(670,957)
Net change in plan fiduciary net position	10,439,483	52,014,577	36,903,940	(52,498,501)	50,005,421
Plan fiduciary net position, beginning	816,915,650	764,901,073	727,997,133	780,495,634	730,490,213
Plan fiduciary net position, ending (b)	827,355,133	816,915,650	764,901,073	727,997,133	780,495,634
Net pension liability, ending = (a) - (b)	<u>\$ 169,188,149</u>	<u>\$ 173,714,705</u>	<u>\$ 209,242,006</u>	<u>\$ 227,123,508</u>	<u>\$ 154,606,398</u>
Plan fiduciary net position as a percentage of total pension liability	83.02%	82.46%	78.52%	76.22%	83.47%
Covered employee payroll	239,956,558	239,583,848	237,354,364	238,385,100	237,794,875
Net pension liability as a percentage of covered employee payroll	70.51%	72.51%	88.16%	95.28%	65.02%

Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditors' report and notes to the schedules of required supplementary information.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

SCHEDULE OF NET PENSION LIABILITY - UNAUDITED

September 30,

	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Total pension liability	\$ 996,543,282	\$ 990,630,355	\$ 974,143,079	\$ 955,120,641	\$ 935,102,032
Plan fiduciary net position	<u>827,355,133</u>	<u>816,915,650</u>	<u>764,901,073</u>	<u>727,997,133</u>	<u>780,495,634</u>
Net pension liability	<u>\$ 169,188,149</u>	<u>\$ 173,714,705</u>	<u>\$ 209,242,006</u>	<u>\$ 227,123,508</u>	<u>\$ 154,606,398</u>
Plan fiduciary net position as a percentage of total pension liability	83.02%	82.46%	78.52%	76.22%	83.47%
Covered employee payroll	\$ 239,956,558	\$ 239,583,848	\$ 237,354,364	\$ 238,385,100	\$ 237,794,875
Net pension liability as a percentage of covered employee payroll	70.51%	72.51%	88.16%	95.28%	65.02%

Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditors' report and notes to the schedules of required supplementary information.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

SCHEDULE OF EMPLOYER CONTRIBUTIONS - UNAUDITED

<u>System year ended September 30,</u>	<u>Actuarially determined contribution</u>	<u>Contribution in relation to the actuarially determined contribution</u>	<u>Contribution deficiency (excess)</u>	<u>Covered employee payroll</u>	<u>Contribution as a percentage of covered payroll</u>
2014	\$34,060,798	\$36,788,260	\$(2,727,462)	\$237,794,875	15.47%
2015	31,605,493	35,436,141	(3,830,648)	238,385,100	14.87%
2016	28,534,042	32,127,591	(3,593,549)	237,354,364	13.54%
2017	27,684,090	29,782,200	(2,098,110)	239,583,848	12.43%
2018	28,061,249	29,361,102	(1,299,853)	239,956,558	12.24%

Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditors' report and notes to the schedules of required supplementary information.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

SCHEDULE OF ANNUAL MONEY-WEIGHTED RATE OF RETURN ON INVESTMENTS - UNAUDITED

System year ended September 30,	Annual money weighted rate of return net of investment expense
2014	9.71
2015	-3.79%
2016	9.45%
2017	11.90%
2018	6.48%

Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditors' report and notes to the schedules of required supplementary information.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

NOTE 1 – METHODS AND ASSUMPTIONS USED IN CALCULATIONS OF ACTUARIALLY DETERMINED CONTRIBUTIONS

Actuarial Methods and Assumptions

The actuarially determined contribution rates in the schedule of the System's contributions are calculated based on the actuarial valuation at the beginning of the plan year. The following actuarial methods and assumptions were used to determine contribution rates reported in that schedule.

	<u>September 30, 2018</u>
Actuarial cost method	Entry age normal
Asset valuation method	5 year smoothing
Amortization method	Layered 20-year amortization of unfunded liability
Discount rate	7.50%
Inflation	2.50%
Salary increases	3% plus merit component based on years of service
Mortality	Healthy: RP-2000 Healthy Mortality 3-year set-forward with generational projections using Scale AA Disabled: RP-2000 Disabled Mortality 3-year set-forward with generational projections using Scale AA

	<u>September 30, 2017</u>
Actuarial cost method	Entry age normal
Asset valuation method	5 year smoothing
Amortization method	Layered 20-year amortization of unfunded liability
Discount rate	7.50%
Inflation	2.50%
Salary increases	3% plus merit component based on years of service
Mortality	Healthy: RP-2000 Healthy Mortality 3-year set-forward with generational projections using Scale AA Disabled: RP-2000 Disabled Mortality 3-year set-forward with generational projections using Scale AA

	<u>September 30, 2016</u>
Actuarial cost method	Entry age normal
Asset valuation method	5 year smoothing
Amortization method	Layered 20-year amortization of unfunded liability
Discount rate	7.50%
Inflation	2.50%
Salary increases	3% plus merit component based on years of service
Mortality	Healthy: RP-2000 Healthy Mortality 3-year set-forward with generational projections using Scale AA Disabled: RP-2000 Disabled Mortality 3-year set-forward with generational projections using Scale AA

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

NOTES TO THE SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

September 30, 2015

Actuarial cost method	Projected unit credit method
Asset valuation method	5 year smoothing
Amortization method	Rolling 30-year level dollar amortization of unfunded liability
Discount rate	8.00%
Inflation	3.125%
Salary increases	3.50% plus merit component based on years of service
Mortality	Healthy: 1994 Group Annuity Mortality Table Disabled: 1983 Railroad Retirement Board Disabled Life Mortality Table

September 30, 2014

Actuarial cost method	Projected unit credit method
Asset valuation method	5 year smoothing
Amortization method	Rolling 30-year level dollar amortization of unfunded liability
Discount rate	8.00%
Inflation	3.125%
Salary increases	Varies by age from 3.50% to 7.017%
Mortality	Healthy: 1994 Group Annuity Mortality Table Disabled: 1983 Railroad Retirement Board Disabled Life Mortality Table

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

ANALYSIS OF FINANCIAL EXPERIENCE

Year ending September 30,

Gain and loss in unfunded actuarial liability during years ended September 30 resulting from differences between assumed experience and actual experience

	2018	2017	2016	2015	2014	2013
Investment experience	\$(9,504,274)	\$ (3,004,069)	\$ 533,258	\$ (2,743,842)	\$ 17,899,526	\$ (87,586)
Liability experience	13,001,556	4,322,571	3,695,678	6,114,189	7,265,891	8,391,763
Gain during year from financial experience	3,497,282	1,318,502	4,228,936	3,370,347	25,165,417	8,304,177
Non-recurring gain items	-	-	-	20,389,054	-	-
Composite gain during year	<u>\$ 3,497,282</u>	<u>\$ 1,318,502</u>	<u>\$ 4,228,936</u>	<u>\$ 23,759,401</u>	<u>\$ 25,165,417</u>	<u>\$ 8,304,177</u>

See accompanying independent auditors' report.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

SOLVENCY TEST - AGGREGATE ACTUARIAL LIABILITIES

Valuation date October 1,	Active member contributions	Retirees & beneficiaries	Active member employer financed contributions	Actuarial value of reported assets	Portion of actuarial liabilities covered by reported assets		
	(1)	(2)	(3)		(1)	(2)	(3)
2018	\$ -	\$ 563,779,679	\$ 432,763,603	\$ 831,005,302	100%	100%	62%
2017	-	540,747,179	449,883,176	818,839,562	100%	100%	62%
2016	-	517,161,890	456,981,189	797,664,391	100%	100%	61%
2015	-	501,123,197	453,997,444	770,006,025	100%	100%	59%
2014	-	494,664,459	417,314,687	737,967,928	100%	100%	58%
2013	-	475,937,321	413,511,258	685,397,323	100%	100%	51%
2012	-	460,581,077	406,310,985	653,001,852	100%	100%	47%
2011	-	441,520,555	400,242,766	661,932,240	100%	100%	55%
2010	-	419,717,802	400,951,838	671,608,995	100%	100%	63%

Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditors' report.

EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

SCHEDULE OF FUNDING PROGRESS

Actuarial valuation date October 1,	Actuarial value of assets	Actuarial liability	Unfunded actuarial liability	Funded ratio	Covered pension payroll	Percentage of covered pension payroll
2018	\$ 831,005,302	\$ 996,543,282	\$ 165,537,980	83.39%	\$ 228,447,481	72.46%
2017	818,839,562	990,630,355	171,790,793	82.66%	227,253,901	75.59%
2016	797,664,391	974,143,079	176,478,688	81.88%	226,907,701	77.78%
2015	770,006,025	955,120,641	185,114,616	80.62%	228,422,585	81.04%
2014	737,967,928	911,979,146	174,011,218	80.92%	227,039,143	76.64%
2013	685,397,323	889,448,579	204,051,256	77.06%	224,623,445	90.84%
2012	653,001,852	866,890,445	213,888,593	75.33%	224,822,252	95.14%
2011	661,932,240	841,763,321	179,831,081	78.64%	223,060,719	80.62%
2010	671,608,995	820,669,641	149,060,646	81.84%	232,451,661	64.13%
2009	667,667,205	794,686,379	127,019,174	84.02%	240,409,390	52.83%

See accompanying independent auditors' report.