

Employees Retirement System of the City of St. Louis

**GASB 67/68 Report
as of September 30, 2019**

**Produced by Cheiron
February 2020**

TABLE OF CONTENTS

<i>Section</i>	<i>Page</i>
Letter of Transmittal	i
Section I Board Summary	1
Section II Certification	3
Section III Determination of Discount Rate	4
Section IV GASB 67 Reporting Information.....	5
Section V GASB 68 Collective Amounts.....	10
Section VI GASB 68 Reporting Information for Participating Employers	14
 <i>Appendices</i>	
Appendix A Membership Information	23
Appendix B Actuarial Assumptions and Methods	25
Appendix C Summary of Plan Provisions.....	28
Appendix D Determination of Discount Rate	29
Appendix E Glossary of Terms.....	35

LETTER OF TRANSMITTAL

February 26, 2020

Board of Pension Trustees
Employees Retirement System of the City of St. Louis
1114 Market Street, Suite 900
St. Louis, Missouri 63101


Dear Members of the Board:

The purpose of this report is to provide accounting and financial reporting information under GASB 67 for the Employees Retirement System of the City of St. Louis and under GASB 68 for participating employers. This information includes:

- Determination of the discount rate as of September 30, 2019,
- Note disclosures and required supplementary information under GASB 67 for the System,
- Determination of collective amounts under GASB 68, and
- Schedules for the financial reporting of participating employers under GASB 68.

If you have any questions about the report or would like additional information, please let us know.

Sincerely,
Cheiron



Stephen T. McElhaney, FSA, FCA, EA
Principal Consulting Actuary



Michael J. Noble, FSA, FCA, EA
Principal Consulting Actuary



**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION I – BOARD SUMMARY

The purpose of this report is to provide accounting and financial disclosure information under Governmental Accounting Standards Board Statements 67 and 68 for the Employees Retirement System of the City of St. Louis and the participating employers. This information includes:

- Determination of the discount rate as of September 30, 2019,
- Note disclosures and required supplementary information under GASB 67 for the System,
- Determination of collective amounts under GASB 68, and
- Schedules for the financial reporting of participating employers under GASB 68.

Highlights

The measurement date for the Employees Retirement System of the City of St. Louis is September 30, 2019. Measurements are based on the fair value of assets as of September 30, 2019 and the Total Pension Liability as of the valuation date, September 30, 2019. There were no significant events during the year for which adjustments to either the assets or liabilities were needed.

The table below provides a summary of the key collective results during this measurement period.

Table I-1			
Summary of Collective Results			
	Measurement Date		
	9/30/2019	9/30/2018	
Net Pension Liability	\$ 217,677,023	\$	169,188,149
Deferred Outflows	(33,384,002)		(3,638,353)
Deferred Inflows	4,323,557		10,104,493
Net Impact on Statement of Net Position	\$ 188,616,578	\$	175,654,289
Pension Expense (\$ Amount)	\$ 42,591,857	\$	29,075,975
Pension Expense (% of Payroll)	17.69%		12.12%

The Net Pension Liability (NPL) increased approximately \$48.5 million since the prior measurement date due to large investment losses and a small experience loss. The investment losses are recognized over five years, and the experience gains are recognized over the average remaining service life, which is three years. Unrecognized amounts are reported as deferred inflows and deferred outflows. As of the end of the reporting year, the System and its participating employers would report a Net Pension Liability of \$217,677,023, Deferred Inflows of \$4,323,557, and Deferred Outflows of \$33,384,002. Consequently, the net impact on the aggregate of participating employers' Statements of Net Position due to the Employees Retirement System of the City of St. Louis would be \$188,616,578 at the end of the measurement year. In addition, any

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION I – BOARD SUMMARY

contributions between the measurement date and each individual employer’s reporting date would be reported as deferred outflows to offset the cash outflow reported.

For the measurement year ending September 30, 2019, the collective annual pension expense is \$42,591,857 or 17.69% of covered-employee payroll. This amount is not related to participating employers’ contributions to the System (\$29,629,568), but instead represents the change in the net impact on participating employer’s Statements of Net Position plus employer contributions (\$188,616,578 – \$175,654,289 + \$29,629,568). The collective pension expense is larger than the collective expense for the prior year. Volatility in pension expense from year to year is to be expected. It will largely be driven by investment gains or losses, but other changes can also have a significant impact. A breakdown of the components of the net pension expense is shown in the report.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION II – CERTIFICATION

The purpose of this report is to provide accounting and financial reporting information under GASB 67 for the Employees Retirement System of the City of St. Louis and under GASB 68 for the employers that participate in the System. This report is for the use of the System, the participating employers and their auditors in preparing financial reports in accordance with applicable law and accounting requirements. This report is not appropriate for other purposes, including the measurement of funding requirements for the Employees Retirement System of the City of St. Louis and estimating the price to settle the System’s obligations.

In preparing our report, we relied on information (some oral and some written) supplied by the Employees Retirement System of the City of St. Louis. This information includes, but is not limited to, the plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice No. 23.

Future actuarial measurements may differ significantly from the current measurements due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law.

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinion contained in this report. This report does not address any contractual or legal issues. We are not attorneys, and our firm does not provide any legal services or advice.

This report was prepared for the Employees Retirement System of the City of St. Louis for the purposes described herein and for the use by the plan auditor in completing an audit related to the matters herein. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.



Stephen T. McElhane, FSA, FCA, EA
Principal Consulting Actuary



Michael J. Noble, FSA, FCA, EA
Principal Consulting Actuary

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION III – DETERMINATION OF DISCOUNT RATE

The discount rate used to measure the Total Pension Liability was 7.50%. This discount rate is intended to be used for accounting and financial reporting but is not appropriate for estimating the price to settle the plan's liability.

The System's Fiduciary Net Position is projected, based on the methods outlined in paragraphs 41-43 of GASB 67, to be sufficient to make all projected benefit payments for the current members when due. Therefore, the long-term expected rate of return on the System's investments (i.e., 7.50%) was applied to all periods of projected benefit payments to determine the Total Pension Liability (TPL). Details of this determination can be found in Appendix D.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION IV – GASB 67 REPORTING INFORMATION

Note Disclosures

The table below shows the changes in the Total Pension Liability, the Plan Fiduciary Net Position (i.e., fair value of system assets), and the Net Pension Liability during the measurement year.

Table IV-1			
Change in Collective Net Pension Liability			
	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
Balances at 9/30/2018	\$ 996,543,282	\$ 827,355,133	\$ 169,188,149
Changes for the year:			
Service cost	12,881,819		12,881,819
Interest	73,206,999		73,206,999
Changes of benefits			
Differences between expected and actual experience	713,562		713,562
Changes of assumptions			
Contributions - employer		29,629,568	(29,629,568)
Contributions - member		147,584	(147,584)
Net investment income		9,411,622	(9,411,622)
Benefit payments	(67,890,918)	(67,890,918)	0
Administrative expense		(875,268)	875,268
Net changes	<u>18,911,462</u>	<u>(29,577,412)</u>	<u>48,488,874</u>
Balances at 9/30/2019	<u>\$ 1,015,454,744</u>	<u>\$ 797,777,721</u>	<u>\$ 217,677,023</u>

During the measurement year, the collective NPL increased by approximately \$48.5 million. The service cost and interest cost increased the collective NPL by approximately \$86.1 million while contributions plus investment gains offset by administrative expenses decreased the collective NPL by approximately \$38.3 million. There was an actuarial experience loss of approximately \$0.7 million.

There were no changes in benefits or assumptions during the year.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION IV – GASB 67 REPORTING INFORMATION

Changes in the discount rate affect the measurement of the TPL. Lower discount rates produce a higher TPL and higher discount rates produce a lower TPL. Because the discount rate does not affect the measurement of assets, the percentage change in the NPL can be very significant for a relatively small change in the discount rate. The table below page shows the sensitivity of the collective NPL to the discount rate.

Table IV-2			
Sensitivity of Collective Net Pension Liability to Changes in Discount Rate			
	1% Decrease 6.50%	Discount Rate 7.50%	1% Increase 8.50%
Total Pension Liability	\$ 1,114,244,773	\$ 1,015,454,744	\$ 930,812,452
Plan Fiduciary Net Position	<u>797,777,721</u>	<u>797,777,721</u>	<u>797,777,721</u>
Collective Net Pension Liability	<u>\$ 316,467,052</u>	<u>\$ 217,677,023</u>	<u>\$ 133,034,731</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	71.6%	78.6%	85.7%

A one percent decrease in the discount rate increases the TPL by approximately 10% and increases the collective NPL by approximately 45%. A one percent increase in the discount rate decreases the TPL by approximately 8% and decreases the collective NPL by approximately 39%.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION IV – GASB 67 REPORTING INFORMATION

Required Supplementary Information

The schedules of Required Supplementary Information generally start with information as of the implementation of GASB 67 and eventually will build up to 10 years of information. The schedule below shows the changes in collective NPL and related ratios required by GASB for the six years since implementation.

Table IV-3 Schedule of Changes in Collective Net Pension Liability and Related Ratios						
	FYE 2019	FYE 2018	FYE 2017	FYE 2016	FYE 2015	FYE 2014
Total Pension Liability						
Service cost (MOY)	\$ 12,881,819	\$ 13,342,936	\$ 13,185,412	\$ 13,703,072	\$ 13,067,553	\$ 10,591,910
Interest (includes interest on service cost)	73,206,999	72,329,296	71,206,835	69,893,488	73,825,307	72,012,146
Changes of benefit terms	0	0	0	0	0	0
Differences between expected and actual experience	713,562	(12,970,671)	(4,372,137)	(3,601,576)	(2,701,109)	(3,664,735)
Changes of assumptions	0	0	0	0	(5,107,330)	0
Benefit payments, including refunds of member contributions	(67,890,918)	(66,788,634)	(63,532,834)	(60,972,546)	(59,065,812)	(56,317,073)
Net change in total pension liability	\$ 18,911,462	\$ 5,912,927	\$ 16,487,276	\$ 19,022,438	\$ 20,018,609	\$ 22,622,248
Total pension liability - beginning	996,543,282	990,630,355	974,143,079	955,120,641	935,102,032	912,479,784
Total pension liability - ending	\$ 1,015,454,744	\$ 996,543,282	\$ 990,630,355	\$ 974,143,079	\$ 955,120,641	\$ 935,102,032
Plan fiduciary net position						
Contributions - employer	\$ 29,629,568	\$ 29,361,102	\$ 29,782,200	\$ 32,127,591	\$ 35,436,141	\$ 36,788,260
Contributions - member	147,584	58,201	134,248	10,093	289,810	129,164
Net investment income	9,411,622	48,770,991	86,394,236	66,460,934	(28,435,882)	70,076,027
Benefit payments, including refunds of member contributions	(67,890,918)	(66,788,634)	(63,532,834)	(60,972,546)	(59,065,812)	(56,317,073)
Administrative expense	(875,268)	(962,177)	(763,273)	(722,132)	(722,758)	(670,957)
Net change in plan fiduciary net position	\$ (29,577,412)	\$ 10,439,483	\$ 52,014,577	\$ 36,903,940	\$ (52,498,501)	\$ 50,005,421
Plan fiduciary net position - beginning	827,355,133	816,915,650	764,901,073	727,997,133	780,495,634	730,490,213
Plan fiduciary net position - ending	\$ 797,777,721	\$ 827,355,133	\$ 816,915,650	\$ 764,901,073	\$ 727,997,133	\$ 780,495,634
Net pension liability - ending	\$ 217,677,023	\$ 169,188,149	\$ 173,714,705	\$ 209,242,006	\$ 227,123,508	\$ 154,606,398
Plan fiduciary net position as a percentage of the total pension liability	78.56%	83.02%	82.46%	78.52%	76.22%	83.47%
Covered payroll	\$ 240,731,698	\$ 239,956,558	\$ 239,583,848	\$ 237,354,364	\$ 238,385,100	\$ 237,794,875
Net pension liability as a percentage of covered payroll	90.42%	70.51%	72.51%	88.16%	95.28%	65.02%

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION IV – GASB 67 REPORTING INFORMATION

Because an Actuarially Determined Contribution (ADC) has been calculated, the following schedule is required.

Table IV-4 Schedule of Collective Employer Contributions						
	FYE 2019	FYE 2018	FYE 2017	FYE 2016	FYE 2015	FYE 2014
Actuarially Determined Contribution	\$ 27,958,439	\$ 28,061,249	\$ 27,684,090	\$ 28,534,042	\$ 31,605,493	\$ 34,060,798
Contributions in Relation to the						
Actuarially Determined Contribution	<u>29,629,568</u>	<u>29,361,102</u>	<u>29,782,200</u>	<u>32,127,591</u>	<u>35,436,141</u>	<u>36,788,260</u>
Contribution Deficiency/(Excess)	<u>\$ (1,671,129)</u>	<u>\$ (1,299,853)</u>	<u>\$ (2,098,110)</u>	<u>\$ (3,593,549)</u>	<u>\$ (3,830,648)</u>	<u>\$ (2,727,462)</u>
Covered Payroll	\$ 240,731,698	\$ 239,956,558	\$ 239,583,848	\$ 237,354,364	\$ 238,385,100	\$ 237,794,875
Contributions as a Percentage of						
Covered Payroll	12.31%	12.24%	12.43%	13.54%	14.87%	15.47%

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION IV – GASB 67 REPORTING INFORMATION

The notes below summarize the key methods and assumptions used to determine the ADC for FYE 2019.

Notes to Schedule

Valuation Date	October 1, 2018
Timing	Actuarially determined contribution rates are calculated based on the actuarial valuation at the beginning of the plan year

Key Methods and Assumptions Used to Determine Contribution Rates:

Actuarial cost method	Entry Age Normal Cost Method
Asset valuation method	Five year smoothing
Amortization method	Fixed 20 year period as of October 1, 2015 as a level percentage of payroll. Future gains and losses and changes in actuarial assumptions will be amortized in layers over separate 20 year periods.
Discount rate	7.50%
Amortization growth rate	3.00%
Price inflation	2.50%
Salary increases	3.00% plus merit component based on years of service
Mortality	RP-2000 Healthy Mortality with 3 year set-forward with generational projections using Scale AA

A complete description of the methods and assumptions used to determine contribution rates for the year ending September 30, 2019 can be found in the October 1, 2018 actuarial valuation report.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION V – GASB 68 COLLECTIVE AMOUNTS

The participating employers were not required to implement GASB 68 until their reporting dates for their first fiscal year that ends after June 15, 2015. We understand that employers with fiscal years ending June 30 or September 30 based their initial disclosures on the September 30, 2014 measurement date. However, employers with fiscal years ending December 31 based their initial disclosures on the September 30, 2015 measurement date. The schedules in this section will be used by employers for fiscal years ending December 31, 2019, June 30, 2020, and September 30, 2020.

Because the Employees Retirement System of the City of St. Louis is a cost-sharing multiple-employer pension plan, each employer participating in the System must reflect a portion of the collective Net Pension Liability, Pension Expense, and Deferred Outflows and Inflows in their financial statements. This section develops the collective amounts that are allocated to participating employers.

The impact of experience gains or losses and assumption changes on the TPL are recognized in expense over the average expected remaining service life of all active and inactive members of the System. As of the measurement date, this recognition period was three years.

During the year, there was an experience loss of approximately \$0.7 million. Approximately \$0.2 million of that loss was recognized as an increase in collective pension expense in the current year and an identical amount will be recognized in each of the next two years, resulting in a collective deferred outflow of resources as of September 30, 2019 of approximately \$0.5 million. Unrecognized experience gains from prior periods were approximately \$10.1 million of which \$5.8 million was recognized as a decrease in collective pension expense in the current year. The unrecognized experience gains from prior periods result in a collective deferred inflow of resources as of September 30, 2019 to be approximately \$4.3 million.

There are no unrecognized gains or losses due to assumption changes as of September 30, 2019.

The impact of investment gains or losses is recognized over a period of five years. During the measurement year, there was an investment loss of approximately \$51.2 million. Approximately \$10.2 million of that loss was recognized in the current year and an identical amount will be recognized in each of the next four years. Unrecognized net investment losses from prior periods were approximately \$3.6 million of which \$11.7 million was recognized as an increase in collective pension expense in the current year. The combination of unrecognized investment losses this year and unrecognized net investment losses from prior periods results in a collective deferred outflow of resources as of September 30, 2019 to be approximately \$32.9 million.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION V – GASB 68 COLLECTIVE AMOUNTS

The table below summarizes the current balances of collective deferred outflows and deferred inflows of resources along with the net recognition over the next five years.

Table V-1														
Schedule of Collective Deferred Inflows and Outflows of Resources														
	Deferred Outflows of Resources	Deferred Inflows of Resources												
Differences between expected and actual experience	\$ 475,708	\$ 4,323,557												
Changes in assumptions	0	0												
Net difference between projected and actual earnings on pension plan investments	<u>32,908,294</u>	<u>0</u>												
Total	<u>\$ 33,384,002</u>	<u>\$ 4,323,557</u>												
<p>Amounts reported as deferred outflows and deferred inflows of resources will be recognized in pension expense as follows:</p> <p style="text-align: center;">Measurement year ended June 30:</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: right;">2020</td> <td style="text-align: right;">(276,001)</td> </tr> <tr> <td style="text-align: right;">2021</td> <td style="text-align: right;">6,637,454</td> </tr> <tr> <td style="text-align: right;">2022</td> <td style="text-align: right;">12,458,120</td> </tr> <tr> <td style="text-align: right;">2023</td> <td style="text-align: right;">10,240,872</td> </tr> <tr> <td style="text-align: right;">2024</td> <td style="text-align: right;">0</td> </tr> <tr> <td style="text-align: right;">Thereafter</td> <td style="text-align: right;">\$ 0</td> </tr> </table>			2020	(276,001)	2021	6,637,454	2022	12,458,120	2023	10,240,872	2024	0	Thereafter	\$ 0
2020	(276,001)													
2021	6,637,454													
2022	12,458,120													
2023	10,240,872													
2024	0													
Thereafter	\$ 0													

The collective annual pension expense recognized by the participating employers can be calculated in two different ways. First, it is the change in the amounts reported on the participating employers' Statements of Net Position that relate to the System and are not attributable to employer contributions. That is, it is the change in collective NPL plus the changes in collective deferred outflows and inflows plus participating employer contributions.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION V – GASB 68 COLLECTIVE AMOUNTS

Alternatively, annual pension expense can be calculated by its individual components. While GASB does not require or suggest the organization of the individual components shown in the table below, we believe it helps to understand the level and volatility of the collective pension expense.

Table V-2		
Calculation of Collective Pension Expense		
	Measurement Year Ending	
	2019	2018
Change in Net Pension Liability	\$ 48,488,874	\$ (4,526,556)
Change in Deferred Outflows	(29,745,649)	(1,747,780)
Change in Deferred Inflows	(5,780,936)	5,989,209
Employer Contributions	<u>29,629,568</u>	<u>29,361,102</u>
Pension Expense	\$ 42,591,857	\$ 29,075,975
Pension Expense as % of Payroll	17.69%	12.12%
Operating Expenses		
Service cost	\$ 12,881,819	\$ 13,342,936
Employee contributions	(147,584)	(58,201)
Administrative expenses	<u>875,268</u>	<u>962,177</u>
Total	\$ 13,609,503	\$ 14,246,912
Financing Expenses		
Interest cost	\$ 73,206,999	\$ 72,329,296
Expected return on assets	<u>(60,615,978)</u>	<u>(59,857,228)</u>
Total	\$ 12,591,021	\$ 12,472,068
Changes		
Benefit changes	\$ 0	\$ 0
Recognition of assumption changes	0	0
Recognition of liability gains and losses	(5,543,082)	(6,981,462)
Recognition of investment gains and losses	<u>21,934,415</u>	<u>9,338,457</u>
Total	\$ 16,391,333	\$ 2,356,995
Pension Expense	\$ 42,591,857	\$ 29,075,975

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION V – GASB 68 COLLECTIVE AMOUNTS

First, there are components referred to as operating expenses. These are items directly attributable to the operation of the plan during the measurement year. Service cost less employee contributions represents the increase in employer-provided benefits attributable to the year, and administrative expenses are the cost of operating the System for the year.

Second, there are the financing expenses: the interest on the Total Pension Liability less the expected return on assets. Since the discount rate is equal to the long-term expected return on assets, the financing expense is just the interest on the Net Pension Liability.

The final category is changes. This category will drive most of the volatility in pension expense from year to year. It includes any changes in benefits made during the year and the recognized amounts due to assumption changes, gains or losses on the TPL, and investment gains or losses. The total collective pension expense increased by about \$13.5 million. There were no changes to either benefits or assumptions for the year.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

**SECTION VI – GASB 68 REPORTING INFORMATION FOR PARTICIPATING
EMPLOYERS**

Proportionate Shares

GASB 68 requires that the proportionate share for each employer be determined based on the “employer’s projected long-term contribution effort to the pension ... as compared to the total projected long-term contribution effort of all employers ...” Although not required as part of the System’s GASB 67 reporting requirements, the System is following the advice of the AICPA¹ and making a determination of each employer’s proportionate share, which will be reviewed by the System’s auditor.

Proportionate shares for each participating employer are determined based on the ratio of each participating employer’s actual contribution to the System during the measurement year to the sum of the actual contributions for all participating employers. The table below shows the actual employer contributions and proportionate shares for each participating employer for the current and prior measurement years.

Table VI-1 Determination of Employers' Proportionate Share					
Employer	September 30, 2019		September 30, 2018		
	Employer Contribution	Proportionate Share	Employer Contribution	Proportionate Share	
CITY	\$ 19,300,888	65.14063%	\$ 19,405,135	66.09130%	
FIREMEN'S RETIREMENT SYSTEM	39,603	0.13366%	38,116	0.12982%	
POLICE RETIREMENT SYSTEM	52,303	0.17652%	47,637	0.16225%	
PARKING METERS	503,025	1.69771%	462,073	1.57376%	
AIRPORT	2,515,937	8.49131%	2,555,369	8.70325%	
WATER	1,575,490	5.31729%	1,665,985	5.67412%	
ZOO	2,559,056	8.63683%	2,349,658	8.00262%	
LIBRARY	1,385,698	4.67674%	1,263,512	4.30335%	
ART MUSEUM	1,409,344	4.75655%	1,321,503	4.50086%	
MENTAL HEALTH BOARD	99,459	0.33567%	84,457	0.28765%	
TOWER GROVE PARK	154,100	0.52009%	139,935	0.47660%	
TAXICAB COMMISSION	17,051	0.05755%	13,276	0.04522%	
FIREFIGHTERS' RETIREMENT PLAN	17,614	0.05945%	14,446	0.04920%	
Total	\$ 29,629,568	100.00000%	\$ 29,361,102	100.00000%	

¹http://www.aicpa.org/interestareas/governmentauditquality/resources/gasbmatters/downloadabledocuments/aicpas_lgep_cs_er_reporting_whitepaper.pdf

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION VI – GASB 68 REPORTING INFORMATION FOR PARTICIPATING EMPLOYERS

The table below shows the proportionate share of the collective NPL (under three discount rates), the collective deferred outflows, the collective deferred inflows, and the collective pension expense allocated to each participating employer as of September 30, 2019.

**Table VI-2
Schedule of Employers' Proportionate Share of Collective Amounts at September 30, 2019**

Employer	Proportionate Share	Share of NPL @ 6.50%	Share of NPL @ 7.50%	Share of NPL @ 8.50%	Share of Deferred Outflows	Share of Deferred Inflows	Pension Expense
CITY	65.14063%	\$ 206,148,639	\$ 141,796,190	\$ 86,659,665	\$ 21,746,550	\$ 2,816,392	\$ 27,744,605
FIREMEN'S RETIREMENT SYSTEM	0.13366%	422,991	290,948	177,815	44,621	5,779	56,928
POLICE RETIREMENT SYSTEM	0.17652%	558,637	384,250	234,837	58,930	7,632	75,184
PARKING METERS	1.69771%	5,372,702	3,695,531	2,258,548	566,765	73,402	723,087
AIRPORT	8.49131%	26,872,183	18,483,620	11,296,385	2,834,737	367,126	3,616,604
WATER	5.31729%	16,827,470	11,574,518	7,073,842	1,775,124	229,896	2,264,732
ZOO	8.63683%	27,332,728	18,800,399	11,489,986	2,883,320	373,418	3,678,587
LIBRARY	4.67674%	14,800,343	10,180,189	6,221,689	1,561,283	202,202	1,991,911
ART MUSEUM	4.75655%	15,052,901	10,353,907	6,327,858	1,587,925	205,652	2,025,901
MENTAL HEALTH BOARD	0.33567%	1,062,300	730,687	446,564	112,062	14,513	142,970
TOWER GROVE PARK	0.52009%	1,645,909	1,132,113	691,898	173,626	22,486	221,515
TAXICAB COMMISSION	0.05755%	182,118	125,267	76,558	19,212	2,488	24,510
FIREFIGHTERS' RETIREMENT PLAN	0.05945%	188,131	129,403	79,086	19,846	2,570	25,320
Total	100.00000%	\$ 316,467,052	\$ 217,677,023	\$ 133,034,731	\$ 33,384,002	\$ 4,323,557	\$ 42,591,857

The proportionate share allocated to each individual employer will change on each measurement date. The net effect of the change in proportion on the share of the collective NPL, collective deferred outflows and collective deferred inflows allocated to each employer becomes a deferred outflow or inflow for that employer and is recognized over the average future working life of the System's active and inactive members (three years).

Similarly, the difference between each employer's actual contributions and the employer's proportionate share of collective employer contributions becomes a deferred outflow or inflow for that employer and is recognized over the average future working life of the System's active and inactive members (three years). Because proportionate shares are determined based on each employer's actual

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION VI – GASB 68 REPORTING INFORMATION FOR PARTICIPATING EMPLOYERS

contributions, there is no difference between the actual contributions and the proportionate share of collective contributions for each employer.

The table below shows the change in proportion and the impact of that change in proportion on the proportionate share of the collective NPL, collective deferred outflows, and collective deferred inflows. It also shows any contribution differences.

Table VI-3 Schedule of Employers' Changes in Proportion and Contribution Differences									
Employer	Proportionate Shares		Impact of Change in Proportion				Contributions		
	9/30/2018	9/30/2019	Net Pension Liability	Deferred Outflows	Deferred Inflows	Net Effect	Actual	Proportionate Share	Difference
CITY	66.09130%	65.14063%	\$ (1,608,424)	\$ (34,589)	\$ 96,060	\$ (1,669,895)	\$ 19,300,888	\$ 19,300,888	\$ 0
FIREMEN'S RETIREMENT SYSTEM	0.12982%	0.13366%	6,501	140	(388)	6,749	39,603	39,603	0
POLICE RETIREMENT SYSTEM	0.16225%	0.17652%	24,156	519	(1,443)	25,080	52,303	52,303	0
PARKING METERS	1.57376%	1.69771%	209,715	4,510	(12,525)	217,730	503,025	503,025	0
AIRPORT	8.70325%	8.49131%	(358,579)	(7,711)	21,416	(372,284)	2,515,937	2,515,937	0
WATER	5.67412%	5.31729%	(603,719)	(12,983)	36,056	(626,792)	1,575,490	1,575,490	0
ZOO	8.00262%	8.63683%	1,073,008	23,075	(64,084)	1,114,017	2,559,056	2,559,056	0
LIBRARY	4.30335%	4.67674%	631,727	13,585	(37,729)	655,871	1,385,698	1,385,698	0
ART MUSEUM	4.50086%	4.75655%	432,585	9,303	(25,835)	449,117	1,409,344	1,409,344	0
MENTAL HEALTH BOARD	0.28765%	0.33567%	81,254	1,747	(4,853)	84,360	99,459	99,459	0
TOWER GROVE PARK	0.47660%	0.52009%	73,578	1,582	(4,394)	76,390	154,100	154,100	0
TAXICAB COMMISSION	0.04522%	0.05755%	20,863	449	(1,246)	21,660	17,051	17,051	0
FIREFIGHTERS' RETIREMENT PLAN	0.04920%	0.05945%	17,335	373	(1,035)	17,997	17,614	17,614	0
Total	100.00000%	100.00000%	\$ 0	\$ 0	\$ 0	\$ 0	\$ 29,629,568	\$ 29,629,568	\$ 0

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION VI – GASB 68 REPORTING INFORMATION FOR PARTICIPATING EMPLOYERS

The table below shows the reconciliation of deferred outflows and inflows due to proportion changes for each participating employer from the prior measurement date to the current measurement date.

**Table VI-4
Reconciliation of Deferred Outflows and Inflows Due to Proportion Change**

Employer	Deferred Outflows				Deferred Inflows			
	Current		Recognition	9/30/2019	Current		Recognition	9/30/2019
	9/30/2018	Year Net Effect			9/30/2018	Year Net Effect		
CITY	\$ 0	\$ 0	\$ 0	\$ 0	\$ (770,317)	\$ (1,669,895)	\$ (958,027)	\$ (1,482,185)
FIREMEN'S RETIREMENT SYSTEM	2,804	6,749	4,158	5,395	0	0	0	0
POLICE RETIREMENT SYSTEM	22,848	25,080	19,784	28,143	(9,760)	0	(9,760)	0
PARKING METERS	75,203	217,730	110,179	182,753	(3,053)	0	(3,053)	0
AIRPORT	0	0	0	0	(205,590)	(372,284)	(257,454)	(320,420)
WATER	0	0	0	0	(289,076)	(626,792)	(394,815)	(521,053)
ZOO	401,293	1,114,017	616,247	899,062	0	0	0	0
LIBRARY	373,543	655,871	405,395	624,019	(41,075)	0	(41,075)	0
ART MUSEUM	493,317	449,117	470,445	471,989	0	0	0	0
MENTAL HEALTH BOARD	4,934	84,360	33,054	56,240	(2,067)	0	(1,034)	(1,033)
TOWER GROVE PARK	22,597	76,390	36,872	62,115	0	0	0	0
TAXICAB COMMISSION	0	21,660	7,220	14,440	(79,769)	0	(47,304)	(32,465)
FIREFIGHTERS' RETIREMENT PLAN	4,170	17,997	9,169	12,999	0	0	0	0
Total	\$ 1,400,709	\$ 2,668,971	\$ 1,712,524	\$ 2,357,156	\$(1,400,707)	\$(2,668,971)	\$ (1,712,522)	\$(2,357,156)

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION VI – GASB 68 REPORTING INFORMATION FOR PARTICIPATING EMPLOYERS

The table below summarizes the deferred outflows allocated to each employer for experience, assumption changes, investment returns, proportion changes, and contribution differences.

Table VI-5 Schedule of Employers' Deferred Outflows at September 30, 2019							
Employer	Proportionate Shares	Experience	Assumption Changes	Investment Return	Proportion Change	Contribution Difference	
CITY	65.14063%	\$ 309,879	\$ 0	\$ 21,436,671	\$ 0	\$ 0	0
FIREMEN'S RETIREMENT SYSTEM	0.13366%	636	0	43,985	5,395	0	0
POLICE RETIREMENT SYSTEM	0.17652%	840	0	58,091	28,143	0	0
PARKING METERS	1.69771%	8,076	0	558,688	182,753	0	0
AIRPORT	8.49131%	40,394	0	2,794,344	0	0	0
WATER	5.31729%	25,295	0	1,749,829	0	0	0
ZOO	8.63683%	41,086	0	2,842,234	899,062	0	0
LIBRARY	4.67674%	22,248	0	1,539,036	624,019	0	0
ART MUSEUM	4.75655%	22,627	0	1,565,298	471,989	0	0
MENTAL HEALTH BOARD	0.33567%	1,597	0	110,465	56,240	0	0
TOWER GROVE PARK	0.52009%	2,474	0	171,152	62,115	0	0
TAXICAB COMMISSION	0.05755%	274	0	18,938	14,440	0	0
FIREFIGHTERS' RETIREMENT PLAN	0.05945%	283	0	19,563	12,999	0	0
Total	100.00000%	\$ 475,708	\$ 0	\$32,908,294	\$ 2,357,156	\$ 0	0

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION VI – GASB 68 REPORTING INFORMATION FOR PARTICIPATING EMPLOYERS

The table below summarizes the deferred inflows allocated to each employer for experience, assumption changes, investment returns, proportion changes, and contribution differences.

Table VI-6 Schedule of Employers' Deferred Inflows at September 30, 2019							
Employer	Proportionate Shares	Experience	Assumption Changes	Investment Return	Proportion Change	Contribution Difference	
CITY	65.14063%	\$ 2,816,392	\$ 0	\$ 0	\$ 1,482,185	\$ 0	
FIREMEN'S RETIREMENT SYSTEM	0.13366%	5,779	0	0	0	0	
POLICE RETIREMENT SYSTEM	0.17652%	7,632	0	0	0	0	
PARKING METERS	1.69771%	73,402	0	0	0	0	
AIRPORT	8.49131%	367,126	0	0	320,420	0	
WATER	5.31729%	229,896	0	0	521,053	0	
ZOO	8.63683%	373,418	0	0	0	0	
LIBRARY	4.67674%	202,202	0	0	0	0	
ART MUSEUM	4.75655%	205,652	0	0	0	0	
MENTAL HEALTH BOARD	0.33567%	14,513	0	0	1,033	0	
TOWER GROVE PARK	0.52009%	22,486	0	0	0	0	
TAXICAB COMMISSION	0.05755%	2,488	0	0	32,465	0	
FIREFIGHTERS' RETIREMENT PLAN	0.05945%	2,570	0	0	0	0	
Total	100.00000%	\$ 4,323,557	\$ 0	\$ 0	\$ 2,357,156	\$ 0	

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION VI – GASB 68 REPORTING INFORMATION FOR PARTICIPATING EMPLOYERS

The table below shows the net amount of deferred outflows and inflows to be recognized by each participating employer in each of the next five years and the total thereafter.

Table VI-7							
Schedule of Employers' Recognition of Deferred Outflows and Inflows at September 30, 2019							
Employer	Recognition for Measurement Year Ending						The reafter
	2020	2021	2022	2023	2024		
CITY	\$ (1,105,342)	\$ 3,767,048	\$ 8,115,298	\$ 6,670,969	\$ 0	\$ 0	\$ 0
FIREMEN'S RETIREMENT SYSTEM	2,777	11,121	16,652	13,688	0	0	0
POLICE RETIREMENT SYSTEM	19,296	20,076	21,991	18,077	0	0	0
PARKING METERS	105,492	185,261	211,503	173,861	0	0	0
AIRPORT	(219,763)	439,513	1,057,857	869,584	0	0	0
WATER	(326,799)	144,002	662,434	544,537	0	0	0
ZOO	503,886	944,604	1,075,987	884,487	0	0	0
LIBRARY	392,488	529,039	582,634	478,939	0	0	0
ART MUSEUM	309,156	465,419	592,576	487,112	0	0	0
MENTAL HEALTH BOARD	26,161	50,400	41,819	34,376	0	0	0
TOWER GROVE PARK	35,216	59,985	64,793	53,262	0	0	0
TAXICAB COMMISSION	(25,404)	11,040	7,169	5,893	0	0	0
FIREFIGHTERS' RETIREMENT PLAN	6,835	9,945	7,406	6,088	0	0	0
Total	\$ (276,001)	\$ 6,637,454	\$12,458,120	\$10,240,872	\$ 0	\$ 0	\$ 0

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION VI – GASB 68 REPORTING INFORMATION FOR PARTICIPATING EMPLOYERS

The table below shows the calculation of the pension expense for each participating employer. The calculation is shown first as the sum of the proportionate share of the collective pension expense and the amounts recognized for proportion changes and contribution differences. The right side of the table shows the calculation as the sum of the changes in NPL and deferred amounts not attributable to contributions.

Table VI-8 Schedule of Employers' Pension Expense for the Measurement Year Ending September 30, 2019									
Employer	Collective			Employer Pension Expense	Change in Employer			Employer Contributions	Employer Pension Expense
	Pension Expense	Change in Proportion	Contribution Difference		Net Pension Liability	Deferred Outflows	Deferred Inflows		
CITY	\$ 27,744,605	\$ (958,027)	\$ 0	\$ 26,786,578	\$ 29,977,537	\$ (19,341,915)	\$ (3,149,931)	\$ 19,300,888	\$ 26,786,579
FIREMEN'S RETIREMENT SYSTEM	56,928	\$ 4,158	0	\$ 61,087	71,311	(42,489)	(7,339)	39,603	61,087
POLICE RETIREMENT SYSTEM	75,184	\$ 10,024	0	\$ 85,209	109,750	(58,323)	(18,522)	52,303	85,208
PARKING METERS	723,087	\$ 107,126	0	\$ 830,214	1,032,917	(617,057)	(88,672)	503,025	830,214
AIRPORT	3,616,604	\$ (257,454)	0	\$ 3,359,151	3,758,759	(2,518,083)	(397,462)	2,515,937	3,359,151
WATER	2,264,732	\$ (394,815)	0	\$ 1,869,918	1,974,575	(1,568,680)	(111,468)	1,575,490	1,869,917
ZOO	3,678,587	\$ 616,247	0	\$ 4,294,834	5,260,911	(3,089,926)	(435,206)	2,559,056	4,294,835
LIBRARY	1,991,911	\$ 364,320	0	\$ 2,356,231	2,899,425	(1,655,188)	(273,706)	1,385,698	2,356,230
ART MUSEUM	2,025,901	\$ 470,445	0	\$ 2,496,346	2,738,981	(1,402,841)	(249,137)	1,409,344	2,496,347
MENTAL HEALTH BOARD	142,970	\$ 32,020	0	\$ 174,990	244,018	(152,902)	(15,586)	99,459	174,990
TOWER GROVE PARK	221,515	\$ 36,872	0	\$ 258,387	325,763	(195,804)	(25,672)	154,100	258,387
TAXICAB COMMISSION	24,510	\$ (40,084)	0	\$ (15,573)	48,767	(32,006)	(49,384)	17,051	(15,573)
FIREFIGHTERS' RETIREMENT PLAN	25,320	\$ 9,169	0	\$ 34,489	46,161	(26,884)	(2,401)	17,614	34,489
Total	\$ 42,591,857	\$ 2	\$ 0	\$ 42,591,859	\$ 48,488,874	\$ (30,702,096)	\$ (4,824,487)	\$ 29,629,568	\$ 42,591,859

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

SECTION VI – GASB 68 REPORTING INFORMATION FOR PARTICIPATING EMPLOYERS

The table below summarizes the information needed for each employer’s schedules of required supplementary information.

Table VI-9
Schedule of Employers' RSI Information at September 30, 2019

Employer	Proportionate Shares	Proportionate Share of NPL	Covered- Employee Payroll	Share of NPL as a % of Payroll	Plan Fiduciary Net Position as % of TPL	Contractually Required Contribution	Actual Contributions	Contribution Deficiency	Contributions as a % of Payroll
CITY	65.14063%	\$ 141,796,190	\$ 156,681,483	90.5%	78.6%	\$ 19,300,888	\$ 19,300,888	\$ 0	12.3%
FIREMEN'S RETIREMENT SYSTEM	0.13366%	290,948	321,019	90.6%	78.6%	39,603	39,603	0	12.3%
POLICE RETIREMENT SYSTEM	0.17652%	384,250	423,912	90.6%	78.6%	52,303	52,303	0	12.3%
PARKING METERS	1.69771%	3,695,531	4,077,831	90.6%	78.6%	503,025	503,025	0	12.3%
AIRPORT	8.49131%	18,483,620	20,392,806	90.6%	78.6%	2,515,937	2,515,937	0	12.3%
WATER	5.31729%	11,574,518	12,770,603	90.6%	78.6%	1,575,490	1,575,490	0	12.3%
ZOO	8.63683%	18,800,399	20,893,354	90.0%	78.6%	2,559,056	2,559,056	0	12.2%
LIBRARY	4.67674%	10,180,189	11,312,455	90.0%	78.6%	1,385,698	1,385,698	0	12.2%
ART MUSEUM	4.75655%	10,353,907	11,505,845	90.0%	78.6%	1,409,344	1,409,344	0	12.2%
MENTAL HEALTH BOARD	0.33567%	730,687	812,250	90.0%	78.6%	99,459	99,459	0	12.2%
TOWER GROVE PARK	0.52009%	1,132,113	1,258,099	90.0%	78.6%	154,100	154,100	0	12.2%
TAXICAB COMMISSION	0.05755%	125,267	139,252	90.0%	78.6%	17,051	17,051	0	12.2%
FIREFIGHTERS' RETIREMENT PLAN	0.05945%	129,403	142,790	90.6%	78.6%	17,614	17,614	0	12.3%
Total	100.00000%	\$217,677,023	\$240,731,698	90.4%	78.6%	\$ 29,629,568	\$ 29,629,568	\$ 0	12.3%

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

APPENDIX A - MEMBERSHIP INFORMATION

The table below summarizes the information needed for each employer's schedules of required supplementary information.

ACTIVE MEMBER DATA			
Valuation as of:	September 30, 2018	September 30, 2019	% change
<u>Participant Counts</u>			
Number	5,202	5,144	-1.1%
Average Current Age	48.6	48.6	0.0%
Average Service	12.0	11.7	-2.8%
Total Annual Salaries of Active Members	228,447,481	228,673,586	0.1%
Average Annual Salary	43,915	44,454	1.2%
DROP Members (included in Active Members)	391	406	3.8%
Average Current Age	61.7	61.5	-0.3%
Average Service	24.7	24.9	0.9%
Total DROP Account Balances	15,670,204	15,670,535	0.0%
Average DROP Account Balances	40,077	38,597	-3.7%

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

APPENDIX A - MEMBERSHIP INFORMATION

Valuation as of:	NON-ACTIVE MEMBER DATA						
	Count			Average Age			
	September 30, 2018	September 30, 2019	% change	September 30, 2018	September 30, 2019	% change	
Disabled Members	187	187	0.0%	66.2	66.4	0.3%	
Retirees	3,978	4,087	2.7%	73.2	73.3	0.0%	
Beneficiaries	513	508	-1.0%	72.3	72.6	0.4%	
Terminated Vested Members	2,512	2,561	2.0%	51.8	51.8	0.0%	
Terminated Non-Vested Members	0	0	N/A	N/A	N/A	N/A	
Total	7,190	7,343	2.1%	65.5	65.6	0.1%	

Valuation as of:	NON-ACTIVE MEMBER DATA						
	Annual Benefit			Average Benefit			
	September 30, 2018	September 30, 2019	% change	September 30, 2018	September 30, 2019	% change	
Disabled Members	1,627,186	1,693,638	4.1%	8,702	9,057	4.1%	
Retirees	49,840,058	52,442,025	5.2%	12,529	12,831	2.4%	
Beneficiaries	5,552,490	5,698,888	2.6%	10,824	11,218	3.6%	
Terminated Vested Members	9,624,285	10,056,982	4.5%	3,831	3,927	2.5%	
Terminated Non-Vested Members	0	0	N/A	N/A	N/A	N/A	
Total	66,644,019	69,891,533	4.9%	11,037	11,327	2.6%	

Please refer to the October 1, 2019 actuarial valuation report for a more complete summary of the data.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

A summary of the actuarial assumptions and methods used to calculate the Total Pension Liability as of September 30, 2019 is provided below, including any assumptions that differ from those used in the October 1, 2019 Actuarial Valuation. Please refer to the October 1, 2019 Actuarial Valuation Report for a complete description of all other assumptions.

Key Actuarial Assumptions

Expected Return on Assets:	7.50% net of investment expenses as of September 30, 2018 7.50% net of investment expenses as of September 30, 2019
Municipal Bond Yield:	4.18% as of September 30, 2018 2.66% as of September 30, 2019 Bond Buyer 20-Bond GO Index, September 27, 2018 and September 26, 2019
Discount Rate:	7.50% as of September 30, 2018 7.50% as of September 30, 2019
Administrative Expenses:	0.30% of payroll

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

Contribution Allocation Procedure

The contribution allocation procedure primarily consists of an actuarial cost method, an asset smoothing method, and an amortization method as described below.

1. Actuarial Cost Method

The Entry Age actuarial cost method was used for active employees, whereby the normal cost is computed as the level annual percentage of pay required to fund the retirement benefits between each member's date of hire and assumed retirement. The actuarial liability is the difference between the present value of future benefits and the present value of future normal costs. The normal cost and actuarial liability are calculated on an individual basis. The sum of the individual amounts is the normal cost and actuarial liability for the System.

2. Asset Valuation Method

The market value of assets less unrecognized returns in each of the last five years, but no earlier than October 1, 2005. Initial unrecognized return is equal to the difference between the actual market return and expected market return, and is recognized over a five-year period. The actuarial value is further adjusted, if necessary, to be within 20% of the market value. The actuarial asset value was initialed at the market value as of October 1, 2005.

3. Amortization Method

The unfunded actuarial liability as of October 1, 2015 is amortized over a fixed 20-year period as a level percentage of payroll. Future gains and losses and changes in actuarial assumptions will be amortized in layers over separate 20-year periods.

To reflect the settlement between the Library, the Board of Trustees, and the City of St. Louis, two Unfunded Accrued Liability Amortization rates are calculated. The Library, Zoo, Art Museum, Tower Grove Park, Taxicab Commission, and Mental Health Board, collectively called the "Lawsuit Beneficiary Employers", have a reduced UAL Amortization rate to reflect the payments received due to the settlement as of the valuation date. First, the UAL amortization payment is determined for the combined plan (base payment). Second, the value of settlement payments made by the City are set up as gain bases and the Lawsuit Beneficiary Employers have a reduction in the contribution rate determined from the payment on these gain bases and their projected payroll. The City's UAL amortization payment is determined only on the base payment. The Lawsuit Beneficiary Employers' UAL amortization payment is the base payment minus the amortization of the gain bases that result from settlement payments.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

4. Contributions

The normal cost for members as of the valuation date is divided by the total salary expected to be paid during the year to determine the total normal cost rate. The unfunded actuarial liability is amortized over a fixed 20-year period as a level percentage of payroll. Future gains and losses and changes in actuarial assumptions will be amortized in layers over separate 20-year periods. An administrative expense rate of 0.30% of payroll is included in the calculation.

The total employer contribution rate is the sum of the employer's normal cost rate, the administrative expense rate, and the UAL rate. The UAL payments are adjusted for interest from the valuation date to the date of expected payment in the following fiscal year.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

APPENDIX C - SUMMARY OF PLAN PROVISIONS

The plan provisions are the same as those summarized in the October 1, 2019 actuarial valuation report.

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 1 - Projection of Contributions

Projections Commence September 30, 2019

* Total covered-employee payroll increases 3.50% per year

Year	Payroll for Current Employees	Payroll for Future Employees	Total Employee Payroll*	EE Rate	ER Rate	AL Rate	Employee Contributions from Current Employees	Employer Contributions for Current Employees	Contributions Related to Payroll of Future Employees	Total Contributions
	(a)	(b)	(c) = (a) + (b)	(d)	(e)	(f)	(g) = (a) x (d)	(h) = (a) x (e)	(i) = (b) x (f)	(j) = (g) + (h) + (i)
1	\$ 228,673,586	\$ 0	\$ 228,673,586	0.00%	13.19%	7.04%	\$ 0	\$ 30,122,001	\$ 0	\$ 30,122,001
2	200,052,284	36,624,878	236,677,162	0.00%	13.34%	7.19%	0	26,685,734	2,634,706	29,320,440
3	176,481,340	68,479,522	244,960,862	0.00%	13.57%	7.42%	0	23,948,333	5,084,108	29,032,441
4	157,505,458	96,029,034	253,534,492	0.00%	13.96%	7.81%	0	21,982,922	7,501,123	29,484,045
5	141,098,904	121,309,295	262,408,200	0.00%	14.24%	8.09%	0	20,088,040	9,815,415	29,903,455
6	126,903,024	144,689,462	271,592,487	0.00%	14.20%	8.05%	0	18,017,389	11,650,602	29,667,991
7	114,686,032	166,412,192	281,098,224	0.00%	14.16%	8.01%	0	16,238,238	13,335,014	29,573,252
8	104,007,113	186,929,548	290,936,661	0.00%	14.12%	7.97%	0	14,685,962	14,906,757	29,592,719
9	94,713,784	206,405,661	301,119,445	0.00%	14.08%	7.94%	0	13,337,242	16,380,369	29,717,611
10	87,070,708	224,587,917	311,658,625	0.00%	14.04%	7.90%	0	12,227,591	17,737,211	29,964,803
11	80,383,216	242,183,461	322,566,677	0.00%	14.01%	7.86%	0	11,257,779	19,034,449	30,292,228
12	74,398,821	259,457,690	333,856,511	0.00%	13.97%	7.82%	0	10,391,408	20,293,608	30,685,016
13	68,939,263	276,602,225	345,541,489	0.00%	13.93%	7.78%	0	9,602,813	21,530,060	31,132,874
14	64,179,760	293,455,681	357,635,441	0.00%	13.89%	7.75%	0	8,915,711	22,731,546	31,647,257
15	59,257,424	310,895,257	370,152,681	0.00%	13.85%	7.71%	0	8,209,736	23,966,103	32,175,839
16	54,658,796	328,449,229	383,108,025	0.00%	13.82%	7.67%	0	7,552,269	25,196,968	32,749,237
17	50,529,567	345,987,239	396,516,806	0.00%	13.80%	7.64%	0	7,007,021	26,432,155	33,439,176
18	46,459,840	363,935,054	410,394,894	0.00%	13.77%	7.61%	0	6,485,510	27,667,342	34,152,852
19	42,449,637	382,309,078	424,758,715	0.00%	13.74%	7.58%	0	6,000,000	28,902,529	34,902,529
20	38,529,054	401,096,216	439,625,270	0.00%	13.71%	7.55%	0	5,550,000	30,137,716	35,687,716
21	34,518,555	420,493,600	455,012,155	0.00%	13.68%	7.52%	0	5,130,000	31,372,903	36,502,903
22	30,848,461	440,089,119	470,937,580	0.00%	13.65%	7.49%	0	4,735,000	32,608,090	37,343,090
23	27,504,732	459,915,664	487,420,396	0.00%	13.62%	7.46%	0	4,360,000	33,843,277	38,203,277
24	23,986,421	480,493,689	504,480,109	0.00%	13.59%	7.43%	0	4,005,000	35,078,464	39,073,464
25	20,752,578	501,384,335	522,136,913	0.00%	13.56%	7.40%	0	3,665,000	36,313,651	39,978,651
26	17,827,088	522,584,618	540,411,705	0.00%	13.53%	7.37%	0	3,335,000	37,548,838	40,883,838
27	14,916,144	544,409,971	559,326,115	0.00%	13.50%	7.34%	0	3,015,000	38,784,025	41,799,025
28	12,219,267	566,683,262	578,902,529	0.00%	13.47%	7.31%	0	2,705,000	40,019,212	42,724,212
29	9,694,437	589,469,680	599,164,117	0.00%	13.44%	7.28%	0	2,405,000	41,254,399	43,649,399
30	7,288,538	612,846,323	620,134,861	0.00%	13.41%	7.25%	0	2,115,000	42,489,586	44,574,586
31	5,363,063	636,476,518	641,839,582	0.00%	13.38%	7.22%	0	1,835,000	43,724,773	45,509,773
32	3,442,411	660,861,556	664,303,967	0.00%	13.35%	7.19%	0	1,565,000	44,959,960	46,434,960
33	2,186,315	685,368,290	687,554,606	0.00%	13.32%	7.16%	0	1,305,000	46,195,147	47,360,147
34	1,560,155	710,058,862	711,619,017	0.00%	13.29%	7.13%	0	1,055,000	47,430,334	48,285,334
35	1,168,546	735,357,136	736,525,683	0.00%	13.26%	7.10%	0	815,000	48,665,521	49,210,521
36	870,069	761,434,013	762,304,082	0.00%	13.23%	7.07%	0	585,000	49,900,708	50,135,708
37	639,258	788,345,467	788,984,724	0.00%	13.20%	7.04%	0	405,000	51,135,895	51,061,095
38	460,226	816,138,963	816,599,190	0.00%	13.17%	7.01%	0	285,000	52,371,082	51,986,282
39	330,327	844,849,834	845,180,161	0.00%	13.14%	6.98%	0	205,000	53,606,269	52,911,469
40	231,882	874,529,585	874,761,467	0.00%	13.11%	6.95%	0	145,000	54,841,456	53,836,656
41	160,093	905,218,025	905,378,118	0.00%	13.08%	6.92%	0	105,000	56,076,643	54,761,843
42	106,481	936,959,872	937,066,352	0.00%	13.05%	6.89%	0	75,000	57,311,830	55,687,030
43	68,756	969,794,919	969,863,675	0.00%	13.02%	6.86%	0	55,000	58,547,017	56,612,217
44	43,118	1,003,765,785	1,003,808,903	0.00%	13.00%	6.84%	0	40,000	59,782,204	57,537,404
45	25,587	1,038,916,628	1,038,942,215	0.00%	12.97%	6.81%	0	29,000	61,017,391	58,462,591
46	14,347	1,075,290,846	1,075,305,193	0.00%	12.94%	6.78%	0	21,000	62,252,578	59,387,778
47	7,039	1,112,933,835	1,112,940,874	0.00%	12.91%	6.75%	0	15,000	63,487,765	60,312,965
48	2,799	1,151,891,006	1,151,893,805	0.00%	12.88%	6.72%	0	11,000	64,722,952	61,238,152
49	930	1,192,209,158	1,192,210,088	0.00%	12.85%	6.69%	0	8,000	65,958,139	62,163,339
50	140	1,233,937,301	1,233,937,441	0.00%	12.82%	6.66%	0	6,000	67,193,326	63,088,526

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 1 - Projection of Contributions

Projections Commence September 30, 2019

* Total covered-employee payroll increases 3.50% per year

Year	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll* (c) = (a) + (b)	EE Rate (d)	ER Rate (e)	AL Rate (f)	Employee Contributions from Current Employees (g) = (a) x (d)	Employer Contributions for Current Employees (h) = (a) x (e)	Contributions Related to Payroll of Future Employees (i) = (b) x (f)	Total Contributions (j) = (g) + (h) + (i)
51	33	1,277,125,218	1,277,125,252	0.00%	6.15%	0.00%	0	2	0	2
52	0	1,321,824,635	1,321,824,635	0.00%	6.15%	0.00%	0	0	0	0
53	0	1,368,088,498	1,368,088,498	0.00%	6.15%	0.00%	0	0	0	0
54	0	1,415,971,595	1,415,971,595	0.00%	6.15%	0.00%	0	0	0	0
55	0	1,465,530,601	1,465,530,601	0.00%	6.15%	0.00%	0	0	0	0
56	0	1,516,824,172	1,516,824,172	0.00%	6.15%	0.00%	0	0	0	0
57	0	1,569,913,018	1,569,913,018	0.00%	6.15%	0.00%	0	0	0	0
58	0	1,624,859,974	1,624,859,974	0.00%	6.15%	0.00%	0	0	0	0
59	0	1,681,730,073	1,681,730,073	0.00%	6.15%	0.00%	0	0	0	0
60	0	1,740,590,625	1,740,590,625	0.00%	6.15%	0.00%	0	0	0	0
61	0	1,801,511,297	1,801,511,297	0.00%	6.15%	0.00%	0	0	0	0
62	0	1,864,564,193	1,864,564,193	0.00%	6.15%	0.00%	0	0	0	0
63	0	1,929,823,939	1,929,823,939	0.00%	6.15%	0.00%	0	0	0	0
64	0	1,997,367,777	1,997,367,777	0.00%	6.15%	0.00%	0	0	0	0
65	0	2,067,275,649	2,067,275,649	0.00%	6.15%	0.00%	0	0	0	0
66	0	2,139,630,297	2,139,630,297	0.00%	6.15%	0.00%	0	0	0	0
67	0	2,214,517,357	2,214,517,357	0.00%	6.15%	0.00%	0	0	0	0
68	0	2,292,025,465	2,292,025,465	0.00%	6.15%	0.00%	0	0	0	0
69	0	2,372,246,356	2,372,246,356	0.00%	6.15%	0.00%	0	0	0	0
70	0	2,455,274,979	2,455,274,979	0.00%	6.15%	0.00%	0	0	0	0
71	0	2,541,209,603	2,541,209,603	0.00%	6.15%	0.00%	0	0	0	0
72	0	2,630,151,939	2,630,151,939	0.00%	6.15%	0.00%	0	0	0	0
73	0	2,722,207,257	2,722,207,257	0.00%	6.15%	0.00%	0	0	0	0
74	0	2,817,484,511	2,817,484,511	0.00%	6.15%	0.00%	0	0	0	0
75	0	2,916,096,469	2,916,096,469	0.00%	6.15%	0.00%	0	0	0	0
76	0	3,018,159,845	3,018,159,845	0.00%	6.15%	0.00%	0	0	0	0
77	0	3,123,795,440	3,123,795,440	0.00%	6.15%	0.00%	0	0	0	0
78	0	3,233,128,280	3,233,128,280	0.00%	6.15%	0.00%	0	0	0	0
79	0	3,346,287,770	3,346,287,770	0.00%	6.15%	0.00%	0	0	0	0
80	0	3,463,407,842	3,463,407,842	0.00%	6.15%	0.00%	0	0	0	0
81	0	3,584,627,116	3,584,627,116	0.00%	6.15%	0.00%	0	0	0	0
82	0	3,710,089,065	3,710,089,065	0.00%	6.15%	0.00%	0	0	0	0
83	0	3,839,942,183	3,839,942,183	0.00%	6.15%	0.00%	0	0	0	0
84	0	3,974,340,159	3,974,340,159	0.00%	6.15%	0.00%	0	0	0	0
85	0	4,113,442,065	4,113,442,065	0.00%	6.15%	0.00%	0	0	0	0
86	0	4,257,412,537	4,257,412,537	0.00%	6.15%	0.00%	0	0	0	0
87	0	4,406,421,976	4,406,421,976	0.00%	6.15%	0.00%	0	0	0	0
88	0	4,560,646,745	4,560,646,745	0.00%	6.15%	0.00%	0	0	0	0
89	0	4,720,269,381	4,720,269,381	0.00%	6.15%	0.00%	0	0	0	0
90	0	4,885,478,809	4,885,478,809	0.00%	6.15%	0.00%	0	0	0	0
91	0	5,056,470,568	5,056,470,568	0.00%	6.15%	0.00%	0	0	0	0
92	0	5,233,447,038	5,233,447,038	0.00%	6.15%	0.00%	0	0	0	0
93	0	5,416,617,684	5,416,617,684	0.00%	6.15%	0.00%	0	0	0	0
94	0	5,606,199,303	5,606,199,303	0.00%	6.15%	0.00%	0	0	0	0
95	0	5,802,416,278	5,802,416,278	0.00%	6.15%	0.00%	0	0	0	0
96	0	6,005,500,848	6,005,500,848	0.00%	6.15%	0.00%	0	0	0	0
97	0	6,215,693,378	6,215,693,378	0.00%	6.15%	0.00%	0	0	0	0
98	0	6,433,242,646	6,433,242,646	0.00%	6.15%	0.00%	0	0	0	0
99	0	6,658,406,139	6,658,406,139	0.00%	6.15%	0.00%	0	0	0	0

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 2 - Projection of the Pension Plan's Fiduciary Net Position

Projections Commence September 30, 2019

* From Table 1 - Projection of Contributions, column (j)

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions* (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
1	\$ 797,777,721	\$ 30,122,000	\$ 76,499,651	\$ 686,021	\$ 60,425,640	\$ 811,139,689
2	811,139,689	29,320,440	77,005,576	690,558	61,417,665	824,181,659
3	824,181,659	29,032,440	78,199,254	701,262	62,377,828	836,691,411
4	836,691,411	29,484,045	80,172,465	718,957	63,294,683	848,578,717
5	848,578,717	29,903,454	81,277,691	728,868	64,195,269	860,670,880
6	860,670,880	29,667,991	86,370,062	774,535	64,932,826	868,127,100
7	868,127,100	29,573,252	89,053,568	798,600	65,407,173	873,255,358
8	873,255,358	29,592,718	93,874,906	841,836	65,621,766	873,753,100
9	873,753,100	29,717,610	95,979,855	860,712	65,584,095	872,214,238
10	872,214,238	29,964,802	95,016,025	852,069	65,510,737	871,821,683
11	871,821,683	30,292,227	93,937,103	842,393	65,534,306	872,868,721
12	872,868,721	30,685,015	93,184,046	835,640	65,660,082	875,194,132
13	875,194,132	31,132,874	92,600,873	830,411	65,881,120	878,776,842
14	878,776,842	31,647,257	91,243,591	818,239	66,232,662	884,594,930
15	884,594,930	32,175,839	90,415,917	810,817	66,738,657	892,282,692
16	892,282,692	32,749,236	88,805,645	796,376	67,422,420	902,852,327
17	902,852,327	8,062,176	87,267,622	782,584	67,361,516	890,225,812
18	890,225,812	9,058,584	85,239,178	764,394	66,493,099	879,773,924
19	879,773,924	9,494,054	84,635,478	758,980	65,717,826	869,591,346
20	869,591,346	10,101,572	82,046,302	735,761	65,046,803	861,957,659
21	861,957,659	7,170,925	80,820,716	724,770	64,386,547	851,969,645
22	851,969,645	6,238,349	78,963,328	708,114	63,643,510	842,180,062
23	842,180,062	4,989,517	76,883,532	689,463	62,912,436	832,509,019
24	832,509,019	2,935,771	75,020,594	672,757	62,151,432	821,902,871
25	821,902,871	1,275,374	73,352,954	657,802	61,325,002	810,492,491
26	810,492,491	1,095,585	71,029,368	636,965	60,517,828	800,439,570
27	800,439,570	916,689	68,914,116	617,996	59,808,526	791,632,674
28	791,632,674	750,950	67,122,735	601,932	59,184,413	783,843,369
29	783,843,369	595,783	64,694,709	580,158	58,664,657	777,828,942
30	777,828,942	447,926	63,088,143	565,751	58,251,905	772,874,878
31	772,874,878	329,593	61,355,389	550,213	57,927,863	769,226,733
32	769,226,733	211,557	59,222,116	531,082	57,721,158	767,406,250
33	767,406,250	134,363	57,641,055	516,904	57,637,253	767,019,907
34	767,019,907	95,881	55,855,781	500,894	57,674,577	768,433,689
35	768,433,689	71,814	53,688,897	481,462	57,867,596	772,202,740
36	772,202,740	53,471	52,159,616	467,748	58,219,927	777,848,774
37	777,848,774	39,286	49,174,588	440,980	58,775,030	787,047,522
38	787,047,522	28,284	46,764,611	419,368	59,585,163	799,476,990
39	799,476,990	20,301	43,734,922	392,199	60,671,335	816,041,505
40	816,041,505	14,251	40,781,725	365,716	62,077,161	836,985,476
41	836,985,476	9,839	38,368,935	344,079	63,803,782	862,086,084
42	862,086,084	6,544	36,178,671	324,437	65,846,072	891,435,591
43	891,435,591	4,225	34,064,432	305,477	68,216,877	925,286,785
44	925,286,785	2,650	32,008,382	287,039	70,936,596	963,930,609
45	963,930,609	1,572	30,006,137	269,084	74,028,082	1,007,685,043
46	1,007,685,043	882	28,055,543	251,592	77,516,216	1,056,895,006
47	1,056,895,006	433	26,152,720	234,528	81,428,045	1,111,936,236
48	1,111,936,236	172	24,294,825	217,867	85,792,986	1,173,216,702
49	1,173,216,702	57	22,485,001	201,637	90,642,738	1,241,172,859
50	1,241,172,859	9	20,727,846	185,880	96,011,161	1,316,270,304

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 2 - Projection of the Pension Plan's Fiduciary Net Position
Projections Commence September 30, 2019

* From Table 1 - Projection of Contributions, column (j)

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions* (b)	Projected Benefit Payments (c)	Projected Administrative Expenses (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a) + (b) - (c) - (d) + (e)
51	1,316,270,304	2	19,027,447	170,631	101,934,416	1,399,006,643
52	1,399,006,643	0	17,390,422	155,951	108,451,057	1,489,911,327
53	1,489,911,327	0	15,820,502	141,872	115,602,239	1,589,551,192
54	1,589,551,192	0	14,318,971	128,407	123,432,124	1,698,535,938
55	1,698,535,938	0	12,888,492	115,579	131,988,166	1,817,520,033
56	1,817,520,033	0	11,532,337	103,418	141,321,288	1,947,205,566
57	1,947,205,566	0	10,253,630	91,951	151,486,132	2,088,346,117
58	2,088,346,117	0	9,053,632	81,190	162,541,428	2,241,752,722
59	2,241,752,722	0	7,933,787	71,147	174,550,381	2,408,298,169
60	2,408,298,169	0	6,897,026	61,850	187,580,956	2,588,920,249
61	2,588,920,249	0	5,945,241	53,315	201,706,228	2,784,627,921
62	2,784,627,921	0	5,077,512	45,533	217,004,930	2,996,509,806
63	2,996,509,806	0	4,293,351	38,501	233,561,994	3,225,739,948
64	3,225,739,948	0	3,592,936	32,220	251,468,989	3,473,583,782
65	3,473,583,782	0	2,973,919	26,669	270,824,709	3,741,407,903
66	3,741,407,903	0	2,432,878	21,817	291,735,881	4,030,689,088
67	4,030,689,088	0	1,966,339	17,633	314,317,827	4,343,022,942
68	4,343,022,942	0	1,569,924	14,079	338,695,173	4,680,134,113
69	4,680,134,113	0	1,237,539	11,098	365,002,678	5,043,888,154
70	5,043,888,154	0	962,801	8,634	393,386,101	5,436,302,820
71	5,436,302,820	0	739,088	6,628	424,003,083	5,859,560,187
72	5,859,560,187	0	559,907	5,021	457,024,076	6,316,019,335
73	6,316,019,335	0	418,407	3,752	492,633,353	6,808,230,529
74	6,808,230,529	0	308,243	2,764	531,030,080	7,338,949,602
75	7,338,949,602	0	223,894	2,008	572,429,424	7,911,153,124
76	7,911,153,124	0	160,282	1,437	617,063,755	8,528,055,160
77	8,528,055,160	0	112,982	1,013	665,183,940	9,193,125,104
78	9,193,125,104	0	78,424	703	717,060,730	9,910,106,707
79	9,910,106,707	0	53,593	481	772,986,254	10,683,038,888
80	10,683,038,888	0	36,061	323	833,275,641	11,516,278,144
81	11,516,278,144	0	23,912	214	898,268,772	12,414,522,789
82	12,414,522,789	0	15,650	140	968,332,173	13,382,839,172
83	13,382,839,172	0	10,102	91	1,043,861,065	14,426,690,044
84	14,426,690,044	0	6,429	58	1,125,281,575	15,551,965,133
85	15,551,965,133	0	4,035	36	1,213,053,125	16,765,014,186
86	16,765,014,186	0	2,499	22	1,307,671,010	18,072,682,675
87	18,072,682,675	0	1,527	14	1,409,669,190	19,482,350,325
88	19,482,350,325	0	920	8	1,519,623,290	21,001,972,686
89	21,001,972,686	0	547	5	1,638,153,848	22,640,125,982
90	22,640,125,982	0	320	3	1,765,929,814	24,406,055,473
91	24,406,055,473	0	182	2	1,903,672,320	26,309,727,609
92	26,309,727,609	0	101	1	2,052,158,750	28,361,886,256
93	28,361,886,256	0	54	0	2,212,227,126	30,574,113,328
94	30,574,113,328	0	25	0	2,384,780,839	32,958,894,141
95	32,958,894,141	0	11	0	2,570,793,743	35,529,687,872
96	35,529,687,872	0	4	0	2,771,315,654	38,301,003,522
97	38,301,003,522	0	2	0	2,987,478,275	41,288,481,795
98	41,288,481,795	0	1	0	3,220,501,580	44,508,983,374
99	44,508,983,374	0	0	0	3,471,700,703	47,980,684,077

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 3 - Actuarial Present Values of Projected Benefit Payments

Projections Commence September 30, 2019

* From Table 2 - Projection of the Pension Plan's Fiduciary Net Position, column (a)

** From Table 2 - Projection of the Pension Plan's Fiduciary Net Position, column (c)

Year	Projected Beginning Fiduciary Net Position*	Projected Benefit Payments for current Plan participants**	"Funded" Portion of Benefit Payments (d) = (c) if (b) >= (c)	"Unfunded" Portion of Benefit Payments (e) = (c) - (d)	Present Value of "Funded" Benefit Payments (f) = (d) / (1+7.50%)^(a)	Present Value of "Unfunded" Benefit Payments (g) = (e) / (1+2.66%)^(a)	Present Value of Benefit Payments Using the Single Discount Rate (h) = (c) / (1+7.50%)^(a)
(a)	(b)	(c)	(c)	(e)	(f)	(g)	(h)
1	\$ 797,777,721	\$ 76,499,651	\$ 76,499,651	\$ 0	\$ 73,782,815	\$ 0	\$ 73,782,815
2	811,139,690	77,005,577	77,005,577	0	69,089,091	0	69,089,091
3	824,181,661	78,199,254	78,199,254	0	65,265,167	0	65,265,167
4	836,691,413	80,172,465	80,172,465	0	62,243,731	0	62,243,731
5	848,578,720	81,277,692	81,277,692	0	58,699,347	0	58,699,347
6	860,670,884	86,370,062	86,370,062	0	58,025,204	0	58,025,204
7	868,127,105	89,053,568	89,053,568	0	55,653,990	0	55,653,990
8	873,255,363	93,874,906	93,874,906	0	54,574,031	0	54,574,031
9	873,753,105	95,979,855	95,979,855	0	51,904,874	0	51,904,874
10	872,214,244	95,016,025	95,016,025	0	47,798,740	0	47,798,740
11	871,821,690	93,937,103	93,937,103	0	43,959,049	0	43,959,049
12	872,868,728	93,184,046	93,184,046	0	40,564,322	0	40,564,322
13	875,194,140	92,600,873	92,600,873	0	37,498,101	0	37,498,101
14	878,776,850	91,243,591	91,243,591	0	34,370,678	0	34,370,678
15	884,594,939	90,415,918	90,415,918	0	31,682,698	0	31,682,698
16	892,282,702	88,805,646	88,805,646	0	28,947,388	0	28,947,388
17	902,852,337	87,267,623	87,267,623	0	26,461,441	0	26,461,441
18	890,225,824	85,239,178	85,239,178	0	24,043,137	0	24,043,137
19	879,773,936	84,635,478	84,635,478	0	22,207,305	0	22,207,305
20	869,591,359	82,046,302	82,046,302	0	20,025,988	0	20,025,988
21	861,957,673	80,820,716	80,820,716	0	18,350,554	0	18,350,554
22	851,969,660	78,963,328	78,963,328	0	16,677,981	0	16,677,981
23	842,180,078	76,883,532	76,883,532	0	15,105,771	0	15,105,771
24	832,509,036	75,020,594	75,020,594	0	13,711,393	0	13,711,393
25	821,902,890	73,352,955	73,352,955	0	12,471,257	0	12,471,257
26	810,492,511	71,029,368	71,029,368	0	11,233,682	0	11,233,682
27	800,439,592	68,914,116	68,914,116	0	10,138,738	0	10,138,738
28	791,632,697	67,122,735	67,122,735	0	9,186,221	0	9,186,221
29	783,843,393	64,694,709	64,694,709	0	8,236,212	0	8,236,212
30	777,828,968	63,088,143	63,088,143	0	7,471,332	0	7,471,332
31	772,874,906	61,355,389	61,355,389	0	6,759,188	0	6,759,188
32	769,226,763	59,222,116	59,222,116	0	6,069,002	0	6,069,002
33	767,406,283	57,641,055	57,641,055	0	5,494,863	0	5,494,863
34	767,019,942	55,855,782	55,855,782	0	4,953,185	0	4,953,185
35	768,433,727	53,688,897	53,688,897	0	4,428,865	0	4,428,865
36	772,202,780	52,159,616	52,159,616	0	4,002,524	0	4,002,524
37	777,848,817	49,174,588	49,174,588	0	3,510,199	0	3,510,199
38	787,047,569	46,764,611	46,764,611	0	3,105,274	0	3,105,274
39	799,477,040	43,734,922	43,734,922	0	2,701,485	0	2,701,485
40	816,041,559	40,781,725	40,781,725	0	2,343,318	0	2,343,318
41	836,985,534	38,368,935	38,368,935	0	2,050,864	0	2,050,864
42	862,086,146	36,178,672	36,178,672	0	1,798,877	0	1,798,877
43	891,435,658	34,064,432	34,064,432	0	1,575,583	0	1,575,583
44	925,286,857	32,008,382	32,008,382	0	1,377,195	0	1,377,195
45	963,930,686	30,006,137	30,006,137	0	1,200,974	0	1,200,974
46	1,007,685,126	28,055,543	28,055,543	0	1,044,560	0	1,044,560
47	1,056,895,095	26,152,720	26,152,720	0	905,781	0	905,781
48	1,111,936,333	24,294,825	24,294,825	0	782,730	0	782,730
49	1,173,216,807	22,485,001	22,485,001	0	673,880	0	673,880
50	1,241,172,971	20,727,846	20,727,846	0	577,877	0	577,877

**EMPLOYEES RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
GASB 67 AND 68 REPORTING FOR SEPTEMBER 30, 2019 MEASUREMENT DATE**

APPENDIX D – DETERMINATION OF DISCOUNT RATE

Table 3 - Actuarial Present Values of Projected Benefit Payments

Projections Commence September 30, 2019

* From Table 2 - Projection of the Pension Plan's Fiduciary Net Position, column (a)

** From Table 2 - Projection of the Pension Plan's Fiduciary Net Position, column (c)

Year	Projected Beginning Fiduciary Net Position*	Projected Benefit Payments for current Plan participants**	"Funded" Portion of Benefit Payments (d) = (c) if (b) >= (c)	"Unfunded" Portion of Benefit Payments (e) = (c) - (d)	Present Value of "Funded" Benefit Payments (f) = (d) / (1+7.50%)^(a)	Present Value of "Unfunded" Benefit Payments (g) = (e) / (1+2.66%)^(a)	Present Value of Benefit Payments Using the Single Discount Rate (h) = (c) / (1+7.50%)^(a)
(a)	(b)	(c)	(c)	(e) = (c) - (d)	(f) = (d) / (1+7.50%)^(a)	(g) = (e) / (1+2.66%)^(a)	(h) = (c) / (1+7.50%)^(a)
51	\$ 1,316,270,425	\$ 19,027,448	\$ 19,027,448	\$ 0	\$ 493,461	\$ 0	\$ 493,461
52	1,399,006,773	17,390,422	17,390,422	0	419,541	0	419,541
53	1,489,911,468	15,820,502	15,820,502	0	355,039	0	355,039
54	1,589,551,343	14,318,971	14,318,971	0	298,923	0	298,923
55	1,698,536,101	12,888,492	12,888,492	0	250,288	0	250,288
56	1,817,520,209	11,532,337	11,532,337	0	208,328	0	208,328
57	1,947,205,756	10,253,630	10,253,630	0	172,306	0	172,306
58	2,088,346,321	9,053,632	9,053,632	0	141,526	0	141,526
59	2,241,752,942	7,933,787	7,933,787	0	115,368	0	115,368
60	2,408,298,406	6,897,026	6,897,026	0	93,295	0	93,295
61	2,588,920,505	5,945,241	5,945,241	0	74,810	0	74,810
62	2,784,628,197	5,077,512	5,077,512	0	59,433	0	59,433
63	2,996,510,103	4,293,351	4,293,351	0	46,748	0	46,748
64	3,225,740,269	3,592,936	3,592,936	0	36,393	0	36,393
65	3,473,584,127	2,973,919	2,973,919	0	28,021	0	28,021
66	3,741,408,275	2,432,878	2,432,878	0	21,324	0	21,324
67	4,030,689,490	1,966,339	1,966,339	0	16,032	0	16,032
68	4,343,023,375	1,569,924	1,569,924	0	11,907	0	11,907
69	4,680,134,579	1,237,539	1,237,539	0	8,731	0	8,731
70	5,043,888,657	962,801	962,801	0	6,319	0	6,319
71	5,436,303,362	739,088	739,088	0	4,512	0	4,512
72	5,859,560,772	559,907	559,907	0	3,180	0	3,180
73	6,316,019,965	418,407	418,407	0	2,210	0	2,210
74	6,808,231,208	308,243	308,243	0	1,515	0	1,515
75	7,338,950,334	223,894	223,894	0	1,024	0	1,024
76	7,911,153,913	160,282	160,282	0	682	0	682
77	8,528,056,010	112,982	112,982	0	447	0	447
78	9,193,126,021	78,424	78,424	0	289	0	289
79	9,910,107,695	53,593	53,593	0	183	0	183
80	10,683,039,953	36,061	36,061	0	115	0	115
81	11,516,279,293	23,912	23,912	0	71	0	71
82	12,414,524,027	15,650	15,650	0	43	0	43
83	13,382,840,507	10,102	10,102	0	26	0	26
84	14,426,691,484	6,429	6,429	0	15	0	15
85	15,551,966,685	4,035	4,035	0	9	0	9
86	16,765,015,859	2,499	2,499	0	5	0	5
87	18,072,684,478	1,527	1,527	0	3	0	3
88	19,482,352,268	920	920	0	2	0	2
89	21,001,974,781	547	547	0	1	0	1
90	22,640,128,241	320	320	0	0	0	0
91	24,406,057,908	182	182	0	0	0	0
92	26,309,730,234	101	101	0	0	0	0
93	28,361,889,086	54	54	0	0	0	0
94	30,574,116,378	25	25	0	0	0	0
95	32,958,897,429	11	11	0	0	0	0
96	35,529,691,417	4	4	0	0	0	0
97	38,301,007,343	2	2	0	0	0	0
98	41,288,485,914	1	1	0	0	0	0
99	44,508,987,814	0	0	0	0	0	0
					\$ 1,087,608,589	+ \$ 0	= \$ 1,087,608,589



APPENDIX E - GLOSSARY OF TERMS

1. Actuarially Determined Contribution

A target or recommended contribution for the reporting period, determined in conformity with Actuarial Standards of Practice based on the most recent measurement available when the contribution for the reporting period was adopted.

2. Actuarial Valuation Date

The date as of which an actuarial valuation is performed. This date may be up to 24 months prior to the measurement date and up to 30 months prior to the employer's reporting date.

3. Deferred Inflow of Resources

An acquisition of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience gains on the Total Pension Liability, assumption changes reducing the Total Pension Liability, or investment gains that are recognized in future reporting periods.

4. Deferred Outflow of Resources

A consumption of net assets by a government employer that is applicable to a future reporting period. In the context of GASB 68, these are experience losses on the Total Pension Liability, assumption changes increasing the Total Pension Liability or investment losses that are recognized in future reporting periods.

5. Entry Age Actuarial Cost Method

The actuarial cost method required for GASB 67 and 68 calculations. Under this method, the actuarial present value of the projected benefits of each individual included in an actuarial valuation is allocated on a level basis over the earnings of the individual between entry age and assumed exit ages. The portion of this actuarial present value allocated to a valuation year is called the Service Cost. The portion of this actuarial present value not provided for at a valuation date by the actuarial present value of future service costs is called the Total Pension Liability.

6. Measurement Date

The date as of which the Total Pension Liability and Plan Fiduciary Net Position are measured. The Total Pension Liability may be projected from the Actuarial Valuation Date to the Measurement Date. The Measurement Date must be the same as the Reporting Date for the plan.

APPENDIX E - GLOSSARY OF TERMS

7. Net Pension Liability

The liability of employers and non-employer contributing entities for employees with benefits provided through a defined benefit pension plan. It is calculated as the Total Pension Liability less the Plan Fiduciary Net Position.

8. Plan Fiduciary Net Position

The fair or market value of assets.

9. Reporting Date

The last day of the plan or employer's fiscal year.

10. Service Cost

The portion of the actuarial present value of projected benefit payments that is attributed to the current period of employee service in conformity with the requirements of GASB 67 and 68. The Service Cost is the normal cost calculated under the Entry Age Actuarial Cost Method.

11. Total Pension Liability

The portion of the actuarial present value of projected benefit payments that is attributed to past periods of employee service in conformity with the requirements of GASB 67 and 68. The Total Pension Liability is the actuarial liability calculated under the Entry Age Actuarial Cost Method. This measurement generally is not appropriate for estimating the cost to settle the Plan's liabilities.



Classic Values, Innovative Advice