#### PUBLIC SCHOOL RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS

SCHEDULES OF PENSION INFORMATION FOR PARTICIPATING EMPLOYERS AND INDEPENDENT AUDITORS' REPORT YEARS ENDED DECEMBER 31, 2018 AND 2017

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# Independent Auditors' Report

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

#### Report on the Schedules

We have audited the accompanying schedules of employer allocations for Public School Retirement System of the City of St. Louis (the "System") as of and for the years ended December 31, 2018 and 2017, and the related notes to the schedules. We have also audited the total for all entities of the columns titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total employer pension plan expense ("specified column totals") included in the accompanying schedules of pension amounts by employer of the System as of and for the years ended December 31, 2018 and 2017, and the related notes to the schedules.

#### Management's Responsibility for the Schedules

The System's management is responsible for the preparation and fair presentation of these schedules 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 the schedules that are free from material misstatement, whether due to fraud or error.

#### Auditors' Responsibility

Our responsibility is to express opinions on the schedules of employer allocations and the specified column totals included in the schedules of pension amounts by employer 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 audits to obtain reasonable assurance about whether the schedules of employer allocations and specified column totals included in the schedules of pension amounts by employer are free from material misstatement.

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An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedules of employer allocations and specified column totals included in the schedules of pension amounts by employer. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedules of employer allocations and specified column totals included in the schedules of pension amounts by employer, 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 schedules of pension amounts by employer allocations and specified column totals included in the schedules of pension amounts by employer 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 schedules of pension amounts by employer allocations and specified column totals included in the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedules of pension amounts by employer.

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

## Opinions

In our opinion, the accompanying schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, and total employer pension plan expense for the total of all participating entities of the System as of and for the years ended December 31, 2018 and 2017, in accordance with accounting principles generally accepted in the United States of America.

#### Other Matters

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the System as of and for the years ended December 31, 2018 and 2017, and our report thereon, dated April 19, 2019, expressed an unmodified opinion on those financial statements.

#### Restriction of Use

Our report is intended solely for the information and use of the System's management, the Board of Trustees, the System's employers, and their auditors and is not intended to be used by anyone other than these specified parties.

Anders Minkler Heller & Helm LLP

October 22, 2019

# Public School Retirement System of the City of St. Louis Schedules of Employer Allocations As of and for the years ended December 31, 2018 and 2017

		2018		201	7	
<u>Employer</u>	Employer Name	Compensation	Employer Allocation Percentage	Compensation	Employer Allocation Percentage	
			-		-	
1	Public Schools Retirement System of					
	the City of St. Louis	\$ 453,896	0.19 %		0.23 %	
2	St. Louis Public Schools	173,914,543	74.05	175,741,386	74.74	
3	Better Learning Communities					
4	Academy Carondelet Leadership	-	-	-	-	
4	Academy	2,873,970	1.22	2,269,316	0.97	
5	City Garden Montessori	2,070,070	1.22	2,200,010	0.57	
0	School	1,540,555	0.66	1,600,524	0.68	
6	Confluence Academy	13,829,432	5.89	14,138,330	6.01	
7	Construction Career	10,020,102	0.00	11,100,000	0.01	
-	Center	-	-	-	-	
8	EAGLE College					
	Preparatory School	2,326,056	0.99	2,236,495	0.95	
9	Gateway Science					
	Academy of St. Louis	6,303,930	2.68	5,785,082	2.46	
10	Grand Center Arts					
	Academy	2,258,217	0.96	3,124,331	1.33	
11	Hawthorn Leadership					
	School for Girls	1,269,306	0.54	1,210,545	0.51	
12	JAMAA Learning Center	-	-	-	-	
13	KIPP Inspire Academy	9,884,630	4.21	8,155,182	3.47	
14	La Salle Middle School	458,971	0.20	692,541	0.29	
15	Lafayette Preparatory					
	Academy	1,481,246	0.63	1,364,175	0.58	
16	Lift for Life Academy	3,579,585	1.52	3,601,413	1.53	
17	North Side Community					
	School	2,680,694	1.14	2,126,487	0.90	
18	Preclarus Mastery					
	Academy	417,344	0.18	754,013	0.32	
19	Premier Charter School	6,239,160	2.66	5,915,343	2.52	
20	South City Preparatory					
<b>.</b> (	Academy	1,992,826	0.85	1,917,863	0.82	
21	St. Louis Language					
	Immersion School	2,296,257	0.98	3,177,575	1.35	
22	The Arch Community	000 000	0.47	470.000	0.00	
~~~	School	399,338	0.17	176,366	0.08	
23	The Biome	661,292	0.28	610,529	0.26	
	Total Compensation for					
	all Employers	\$ 234,861,248	100.00 %	<u>\$ 235,132,592</u>	100.00 %	
	. ,					

		Net Pensio	on Liability	Deferred Outflows of Resources				
_ER#	Employer Name	Beginning Net Pension Liability	Ending Net Pension Liability	Difference Between Expected and Actual Experience	Changes in Assumptions	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of <u>Contributions</u>	Total Deferred Outflows of <u>Resources</u>
1	Public Schools Retirement System of the City of St.							
	Louis	\$ 1,727,361	\$ 1,621,273	\$ 3,089	\$ 397,711	\$ 215,095	\$ 28,168	\$ 644,063
2	St. Louis Public Schools	567,317,055	621,205,925	1,183,395	152,386,786	82,415,738	-	235,985,919
3	Better Learning Communities Academy	_	_	-	_	_	-	-
4	Carondelet Leadership							
	Academy	7,325,660	10,265,542	19,556	2,518,220	1,361,935	987,759	4,887,470
5	City Garden Montessori	1,020,000	10,200,012	10,000	2,010,220	1,001,000	001,100	1,001,110
Ū	School	5,166,708	5,502,713	10,483	1,349,860	730,048	145,588	2,235,979
6	Confluence Academy	45,640,450	49,397,394	94,102	12,117,576	6,553,580	-	18,765,258
7	Construction Career Center	-	-	-	-	-	-	-
8	EAGLE College Preparatory School	7,219,710	8,308,448	15,828	2,038,129	1,102,286	610,785	3,767,028
9	Gateway Science Academy of St.	19 675 020	00 517 000	40.905	E E22 607	2 0 9 7 2 4 7	1 212 274	0.967.000
10	Louis Grand Center Arts	18,675,029	22,517,028	42,895	5,523,607	2,987,347	1,313,374	9,867,223
10	Academy Hawthorn Leadership	10,085,765	8,066,133	15,366	1,978,687	1,070,138	101,946	3,166,137
12	School for Girls JAMAA Learning Center	3,907,805	4,533,839 -	8,637	1,112,187 -	601,507 -	400,162 8,591	2,122,493 8,591

		Net Pensio	on Liability	Deferred Outflows of Resources				
						Net Difference	Changes in Proportion and Differences	
						Between	Between	
						Projected and	Employer	
				Difference		Actual	Contributions	
				Between		Investment	and	
		Beginning Net	Ending Net	Expected and		Earnings on	Proportionate	Total Deferred
		Pension	Pension	Actual	Changes in	Pension Plan	Share of	Outflows of
ER#	Employer Name	Liability	Liability	Experience	Assumptions	Investments	Contributions	Resources
								• /= • • • • • •
13	KIPP Inspire Academy	\$ 26,326,036	\$ 35,306,940	\$ 67,260	\$ 8,661,075	¥ ))-		\$ 17,397,886
14	La Salle Middle School	2,235,616	1,639,402	3,123	402,158	217,500	145,765	768,546
15	Lafayette Preparatory	4 400 744	F 000 000	40.070	4 007 000	704.040	474.004	0 404 005
40	Academy	4,403,741	5,290,869	10,079	1,297,892	701,943	474,381	2,484,295
16	Lift for Life Academy	11,625,850	12,785,931	24,357	3,136,491	1,696,317	69,073	4,926,238
17	North Side Community School	6 964 599	0 575 100	10 0/1	0 0 4 0 0 6 0	1 070 045	041 040	4 570 402
18	Preclarus Mastery	6,864,588	9,575,180	18,241	2,348,868	1,270,345	941,949	4,579,403
10	Academy	2,434,056	1,490,711	2,840	365,683	197,773	76,791	643,087
19	Premier Charter School	19,095,531	22,285,676	42,454	5,466,855	2,956,653	712,809	9,178,771
20	South City Preparatory	10,000,001	22,200,070	72,707	0,400,000	2,000,000	712,000	5,170,771
20	Academy	6,191,124	7,118,183	13,560	1,746,147	944,373	434,844	3,138,924
21	St. Louis Language	0,101,121	1,110,100	10,000	.,	011,010	101,011	0,100,021
	Immersion School	10,257,644	8,202,007	15,625	2,012,018	1,088,165	28,596	3,144,404
22	The Arch Community	-, - ,-	-, -,	-,	,- ,	,,	-,	-, , -
	School	569,334	1,426,396	2,717	349,906	189,241	420,407	962,271
23	The Biome	1,970,869	2,362,070	4,500	579,435	313,377	297,535	1,194,847
		<u>\$759,039,932</u>	<u>\$838,901,660</u>	<u>\$ 1,598,107</u>	<u>\$205,789,291</u>	<u>\$111,297,553</u>	<u>\$ 11,183,882</u>	<u>\$329,868,833</u>

			Deferred Inflow	s of Resources		
				Changes in Proportion and		
				Differences		
				Between		
		Difference	Difference	Employer		
		Between	Between	Contributions and		
		Expected and	Projected and	Proportionate	Total Deferred	Total Employer
ER#	Employer Name	Actual Experience	Actual Investment Earnings	Share of Contributions	Inflows of Resources	Pension Plan <u>Expense</u>
		Experience		Contributions	Resources	Expense
1	Public Schools					
	Retirement System					
	of the City of St.					
	Louis	\$ (39,693)				
2	St. Louis Public Schools	(15,208,884)	(28,086,949)	(5,822,283)	(49,118,116)	142,229,840
3	Better Learning					
	Communities				(405.404)	
4	Academy	-	-	(135,491)	(135,491)	-
4	Carondelet Leadership	(251 220)	(464 142)	(22.020)	(740 202)	2 250 274
5	Academy City Garden Montessori	(251,330)	(464,142)	(32,920)	(748,392)	2,350,374
5	School	(134,722)	(248,797)	(105,302)	(488,821)	1,259,888
6	Confluence Academy	(1,209,388)	(2,233,433)	(869,009)	(4,311,830)	11,309,911
7	Construction Career	(1,200,000)	(2,200,100)	(000,000)	(1,011,000)	11,000,011
-	Center	-	-	(56,899)	(56,899)	-
8	EAGLE College					
	Preparatory School	(203,414)	(375,655)	-	(579,069)	1,902,283
9	Gateway Science					
	Academy of St.					
	Louis	(551,281)	(1,018,076)	-	(1,569,357)	5,155,446
10	Grand Center Arts	(407,400)	(004.000)	(4.040.000)	(4.004.400)	4 0 40 000
4.4	Academy	(197,482)	(364,699)	(1,319,299)	(1,881,480)	1,846,803
11	Hawthorn Leadership School for Girls	(111 001)	(204.004)		(215 002)	1 020 057
12	JAMAA Learning Center	(111,001)	(204,991)	- (177,923)	(315,992) (177,923)	1,038,057
12	JAMAA Leanning Center	-	-	(177,923)	(177,923)	-

			Deferred Inflow	s of Resources		
ER#	Employer Name	Difference Between Expected and Actual Experience	Difference Between Projected and Actual Investment Earnings	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Total Employer Pension Plan Expense
13	KIPP Inspire Academy	\$ (864,414)	\$ (1,596,353)	\$ -	\$ (2,460,767)	\$ 8,083,794
14	La Salle Middle School	(40,137)	(74,123)	(333,445)	(447,705)	375,353
15	Lafayette Preparatory					,
	Academy	(129,535)	(239,219)	-	(368,754)	1,211,385
16	Lift for Life Academy	(313,036)	(578,098)	(121,296)	(1,012,430)	2,927,437
17	North Side Community	( , , ,				, ,
	School	(234,428)	(432,928)	-	(667,356)	2,192,311
18	Preclarus Mastery	( , , ,				, ,
	Academy	(36,497)	(67,400)	(526,797)	(630,694)	341,310
19	Premier Charter School	(545,617)	(1,007,615)	(196,163)	(1,749,395)	5,102,476
20	South City Preparatory					
	Academy	(174,273)	(321,839)	(9,625)	(505,737)	1,629,762
21	St. Louis Language					
	Immersion School	(200,808)	(370,842)	(1,359,095)	(1,930,745)	1,877,912
22	The Arch Community					
	School	(34,922)	(64,492)	-	(99,414)	326,584
23	The Biome	(57,830)	(106,798)		(164,628)	540,812
		<u>\$ (20,538,692)</u>	<u>\$ (37,929,753)</u>	<u>\$ (11,183,883)</u>	<u>\$ (69,652,328)</u>	<u>\$ 192,072,941</u>

		Net Pensie	on Liability	Deferred Outflows of Resources				
_ER#	Employer Name	Beginning Net Pension Liability	Ending Net Pension Liability	Difference Between Expected and Actual Experience	Changes in <u>Assumptions</u>	Net Difference Between Projected and Actual Investment Earnings on Pension Plan Investments	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of <u>Contributions</u>	Total Deferred Outflows of <u>Resources</u>
1	Public Schools Retirement System of the City of St.							
	Louis	\$ 876,434	\$ 1,727,361	\$ 7,274	\$ 746,330	\$ 119,079	\$ 46,352	\$ 919,035
2	St. Louis Public Schools	317,772,735	567,317,055	2,388,891	245,117,100	39,109,188	-	286,615,179
3	Better Learning Communities Academy	_	_			_	_	_
4	Carondelet Leadership							
	Academy	3,678,215	7,325,660	30,847	3,165,151	505,010	202,899	3,903,907
5	City Garden Montessori	0,010,210	1,020,000	00,011	0,100,101	000,010	202,000	0,000,001
Ŭ	School	2,441,426	5,166,708	21,756	2,232,347	356,178	265,828	2,876,109
6	Confluence Academy	25,540,808	45,640,450	192,185	19,719,581	3,146,320		23,058,086
7	Construction Career Center		-	-	-	-	-	
8	EAGLE College Preparatory School	3,034,218	7,219,710	30,401	3,119,374	497,706	904,913	4,552,394
9	Gateway Science Academy of St. Louis	9 796 673	18 675 020	70 620	8,068,802	1 297 402	064 647	10,399,489
10	Grand Center Arts	8,786,673	18,675,029	78,638	8,068,802	1,287,402	964,647	10,399,489
10	Academy	5,782,678	10,085,765	42,470	4,357,693	695,283	265,583	5,361,029
11	Hawthorn Leadership	4 044 040	0.007.005	40.455	4 000 404	000 000	040 400	0 507 704
12	School for Girls JAMAA Learning Center	1,611,040	3,907,805 -	16,455 -	1,688,421 -	269,393 -	613,492 30,070	2,587,761 30,070

		Net Pensio	on Liability	Deferred Outflows of Resources				
							Changes in Proportion and	
						Net Difference	Differences	
						Between	Between	
						Projected and	Employer	
				Difference Between		Actual Investment	Contributions and	
		Beginning Net	Ending Net	Expected and		Earnings on	Proportionate	Total Deferred
		Pension	Pension	Actual	Changes in	Pension Plan	Share of	Outflows of
ER#	Employer Name	Liability	Liability	Experience	Assumptions	Investments	Contributions	Resources
13	KIPP Inspire Academy	\$ 11,823,165	\$ 26,326,036	\$ 110,855	\$ 11,374,524	\$ 1,814,840	\$ 2,906,912	\$ 16,207,131
14	La Salle Middle School	1,090,886	2,235,616	9,414	965,928	154,117	318,891	1,448,350
15	Lafayette Preparatory							
	Academy	1,706,130	4,403,741	18,544	1,902,697	303,581	539,921	2,764,743
16	Lift for Life Academy	6,663,959	11,625,850	48,955	5,023,108	801,452	150,016	6,023,531
17	North Side Community	0.007.445	0 004 500	00.000	0.005.000	470.005		0 700 070
18	School	3,667,415	6,864,588	28,906	2,965,939	473,225	315,603	3,783,673
10	Preclarus Mastery Academy	1,114,527	2,434,056	10,249	1,051,667	167,797	131,564	1,361,277
19	Premier Charter School	10,951,973	19,095,531	80,409	8,250,486	1,316,390	478,323	10,125,608
20	South City Preparatory	10,301,375	19,090,001	00,403	0,230,400	1,010,000	470,020	10,125,000
20	Academy	2,706,540	6,191,124	26,070	2,674,960	426,798	550,392	3,678,220
21	St. Louis Language	_,,	•,•••,•=•	_0,010	_,,	,	000,002	0,010,0
	Immersion School	5,787,581	10,257,644	43,193	4,431,955	707,132	57,191	5,239,471
22	The Arch Community	, , -		,	, ,	, -	, -	, ,
	School	-	569,334	2,397	245,988	39,248	156,655	444,288
23	The Biome	645,375	1,970,869	8,299	851,541	135,866	394,466	1,390,172
		<u>\$415,681,778</u>	<u>\$759,039,932</u>	<u>\$ 3,196,208</u>	<u>\$327,953,592</u>	<u>\$ 52,326,005</u>	<u>\$ 9,293,718</u>	<u>\$392,769,523</u>

			Deferred Inflow	s of Resources		
				Changes in		
				Proportion and		
				Differences		
		Difference		Between		
		Difference Between	Difference Between	Employer Contributions and		
		Expected and	Projected and	Proportionate	Total Deferred	Total Employer
		Actual	Actual Investment	Share of	Inflows of	Pension Plan
ER#	Employer Name	Experience	Earnings	Contributions	Resources	Expense
1	Public Schools					
1	Retirement System					
	of the City of St.					
	Louis	\$ (21,064)	\$ (115,090)	\$ (10,157)	\$ (146,311)	\$ 450,204
2	St. Louis Public Schools	(6,918,094)	(37,798,972)	(6,323,888)	(51,040,954)	141,442,661
3	Better Learning		<b>, , ,</b>			
	Communities					
	Academy	-	-	(305,654)	(305,654)	(170,164)
4	Carondelet Leadership					
_	Academy	(89,332)	(488,091)	(65,840)	(643,263)	1,915,083
5	City Garden Montessori	()				
•	School	(63,005)	(344,245)	(44,084)	(451,334)	1,412,110
6	Confluence Academy	(556,558)	(3,040,913)	(958,608)	(4,556,079)	11,097,801
7	Construction Career			(100 146)	(100 146)	(110 017)
8	Center EAGLE College	-	-	(199,146)	(199,146)	(142,247)
0	Preparatory School	(88,040)	(481,032)		(569,072)	2,262,119
9	Gateway Science	(00,040)	(401,032)	-	(309,072)	2,202,119
0	Academy of St.					
	Louis	(227,731)	(1,244,272)	-	(1,472,003)	5,153,215
10	Grand Center Arts	(, )	(`,=``,=`=)		(.,,)	0,100,210
	Academy	(122,990)	(671,990)	(130,279)	(925,259)	2,681,954
11	Hawthorn Leadership	/				· ·
	School for Girls	(47,653)	(260,368)	-	(308,021)	1,293,275
12	JAMAA Learning Center	-	-	(355,846)	(355,846)	(156,444)

Total Employer Pension Plan Expense
\$ 8,107,281
741,650
,
1,355,388
_,
1,916,763
.,,
628,000
4,915,361
.,,
1,776,464
.,,
2,489,328
_,,
200,732
671,858
\$ 193,026,507

## 1. Description of System

#### General

The Public School Retirement System of the City of St. Louis (the "System") is the administrator of a cost-sharing multiple-employer defined benefit pension plan existing under provisions of the Revised Statutes of the State of Missouri (the "Statutes") to provide retirement benefits for all employees of the Board of Education of the City of St. Louis, of the Charter Schools located within the St. Louis Public School District, and of all employees of the System.

Operations and management of the System are generally prescribed in the Statutes and are supervised by the Board of Trustees. The System's annual reports for December 31, 2018 and 2017 are available at www.psrsstl.org.

### Membership and Eligibility

All persons employed on a full-time basis by the St. Louis Schools Board of Education, Charter Schools in the City of St. Louis, and the System are members of the plan as a condition of employment.

#### **Benefits**

Upon retirement at age 65, or at any age if age plus years of credited service equals or exceeds 80 (Rule of 80) for the years ended December 31, 2018 and 2017, members receive monthly payments for life of yearly benefits equal to years of credited service multiplied by two percent of average final compensation, but not to exceed 60% of average final compensation. Early retirement can occur at age 60 with five years of service. The service retirement allowance is reduced five ninths of one percent for each month of commencement prior to age 65 or the age at which the Rule of 80 would apply for the years ended December 31, 2018 and 2017, would have been satisfied had the employee continued working until that age, if earlier.

In lieu of the benefit paid over the lifetime of the member, reduced benefit options are available for survivor and beneficiary payments.

Members are eligible, after accumulation of five years of credited service, for disability benefits prior to eligibility of normal retirement. Survivor benefits are available for qualified beneficiaries of members who die after at least 18 months of active membership.

## **Contributions by Members**

Member contribution rates are established by state laws and are paid by the employee based on Missouri Revised Statutes 169.440 - 169.597. Active members hired before January 1, 2018 contribute 5.50% of covered compensation for the year ended December 31, 2018. This rate increases 0.50% per year until it reaches 9.00%. After this, the contribution rate will remain at 9.00% of covered compensation. Active members hired on or after January 1, 2018 contribute 9.00% of covered compensation. Active members hired on or after January 1, 2018 contribute 9.00% of covered compensation. Active members contributed 5.00% of covered compensation for the year ended December 31, 2017.

Accumulated contributions are credited at the rate of interest established by the Board of Trustees. The current crediting rate is 5.00%.

### **Contributions by Employers**

Employer contribution rates are established by state law and are paid by the employers based on Missouri Revised Statute 169.440 - 169.597. The System's contractually required contribution rate applied to St. Louis Public Schools and the Retirement System for the year ended December 31, 2018 was 19.10% of annual payroll, actuarially determined as an amount that, when combined with employee contributions, was expected to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability. For all other employers, the System's contractually required contribution rate will be set at 16.00% of covered payroll for the year ended December 31, 2018. This contribution rate shall be decreased by 0.50% in each subsequent year until reaching 9.00% of covered payroll. After this, the contribution rate will apply the contractually required contribution rate of 16.00% in the year ended December 31, 2019, which shall be decreased by 0.50% in each subsequent year until reaching 9.00% of covered payroll.

The System's contractually required contribution rate for the year ended December 31, 2017 was 15.73% of annual payroll, actuarially determined as an amount that, when combined with employee contributions, was expected to finance the costs of benefits earned by employees during the year, with an additional amount to finance any unfunded accrued liability.

# 2. Summary of Significant Accounting Policies

# Basis of Presentation and Accounting

The schedules of the System have been prepared in accordance with the criteria established by the Governmental Accounting Standards Board ("GASB"), which is the source of authoritative accounting principles generally accepted in the United States of America ("GAAP"), as applied to governmental units. The System's schedules are prepared using the accrual basis of accounting.

The System's employers are required to report pension information in their schedules for periods beginning after June 15, 2014, in accordance with Governmental Accounting Standards Board Statement No. 68, *Accounting and Financial Reporting for Pensions*. The Schedules of Employer Allocations and Pension Amounts by Employer provide employers with the required information for financial reporting under that standard.

The underlying financial information used to prepare the pension allocation schedules is based on the System's financial statements, accounting, and payroll reporting systems.

Member and employer contributions are recognized when due, pursuant to formal commitments and statutory requirements. Benefits and refunds of employee contributions are recognized when due and payable in accordance with the State of Missouri statutes governing the System. Expenses are recognized when the liability is incurred, regardless of when payment is made. Investments are reported at fair value on a trade date basis.

Total employer compensation as of and for the years ended December 31, 2018 and 2017, was used as the basis for determining each employer's proportionate share of the collective pension amounts reported on the schedules.

#### Use of Estimates

The preparation of schedules in conformity with GAAP requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

#### Fair Value Measurements

The System follows guidance issued by the GASB on fair value measurements, which establishes a framework for measuring fair value, clarifies the definition of fair value within that framework, and expands disclosures about the use of fair value measurements. This guidance applies whenever fair value is the applicable measurement. The three general valuation techniques used to measure fair value are the market approach, cost approach, and income approach.

## Subsequent Events

The System has evaluated subsequent events through October 22, 2019, the date the schedules of pension information for participating employers were available to be issued.

# 3. Schedules of Employer Allocations

The Schedules of Employer Allocations reflect employer compensation as of and for the years ended December 31, 2018 and 2017 and includes the following for each individual employer:

- employer contributing entity;
- the amount of the employer contributing entity's compensation; and,
- the employer contributing entity's compensation as a percentage of total employer compensation, as defined by this policy.

The components of the net pension liability of the participating employers as of December 31, 2018 and 2017 are as follows:

	2018	2017
Total pension liability	\$1,658,351,553	\$ 1,673,122,191
Fiduciary net position	819,449,893	914,082,259
Employers' net pension liability	<u>\$ 838,901,660</u>	<u>\$ 759,039,932</u>
Plan net position as a percentage of total pension		
liability	49.41 %	54.63 %
Covered employee payroll	\$ 234,861,248	\$ 235,132,592
Employers' net pension liability		
as a percentage of employee covered payroll	357.19 %	322.81 %

## 4. Schedules of Pension Amounts by Employer

The Schedules of Pension Amounts by Employer include only certain categories of deferred outflows of resources and deferred inflows of resources. These include differences between expected and actual experience, changes in assumptions, net differences between projected and actual earnings on pension plan investments, and changes in proportion and differences between employer contributions and proportionate share of contributions. The Schedules do not include deferred outflows/inflows of resources for changes in the employer's proportionate share of contributions made subsequent to measurement date.

For the year ended December 31, 2018, the System recognized pension expense of \$192,072,941 consisting of the current year contribution, pension liability adjustment, and amortization of deferred outflows and inflows of resources. At December 31, 2018, the System reported deferred outflows and inflows of resources related to pensions from the following sources:

		Deferred Outflows of Resources		Deferred Inflows of Resources
Difference between expected and actual experience	\$	1,598,107	\$	(20,538,692)
Changes in assumptions	ψ	205,789,291	ψ	(20,000,092)
Net difference between projected and actual earnings on pension plan investments		111,297,553		(37,929,753)
Changes in proportion and differences between employer contributions and proportionate share				· · · ·
of contributions	-	11,183,882		(11,183,883)
Total	\$	329,868,833	\$	(69,652,328)

For the year ended December 31, 2017, the System recognized pension expense of \$193,026,507 consisting of the current year contribution, pension liability adjustment, and amortization of deferred outflows and inflows of resources. At December 31, 2017, the System reported deferred outflows and inflows of resources related to pensions from the following sources:

		Deferred Outflows of Resources		Deferred Inflows of Resources
Difference between expected and actual experience	\$	3,196,208	\$	(9,256,041)
Changes in assumptions		327,953,592		-
Net difference between projected and actual earnings on pension plan investments Changes in proportion and differences between		52,326,005		(50,573,005)
employer contributions and proportionate share of contributions		9,293,718		<u>(9,293,719</u> )
Total	<u>\$</u>	392,769,523	<u>\$</u>	<u>(69,122,765)</u>

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense in the System's year ending December 31 as follows:

Amortization Schedule				
Year	Amount			
2019	\$ 120,582,614			
2020	99,676,362			
2021	17,175,098			
2022	21,670,002			
Total	<u>\$ 259,104,076</u>			

## 5. Sensitivity of Net Pension Eligibility to Changes in the Discount Rate

The following presents the net pension liability as of December 31, 2018 and 2017, calculated using the discount rate of 4.78 percent, as well as what the net pension liability would have been if it were calculated using a discount rate that is one-percentage-point lower or one-percentage-point higher than the current rate:

Net pension liability - 2018	1% Decrease (3.78%) \$ 1,038,507,504	Current Discount1% IncreaseRate (4.78%)(5.78%)\$ 838,901,660\$ 673,166,844
Net pension liability - 2017	1% Decrease (3.78%) \$ 961,985,980	Current Discount1% IncreaseRate (4.78%)(5.78%)\$ 759,039,932\$ 590,565,070

The projection of cash flows used to determine the discount rate assumed that System contributions will continue to follow the current funding policy. Based on those assumptions, the System's fiduciary net position was projected to be insufficient to make all projected future benefit payments of current plan members.

Under GASB Statement No. 68, employers participating in the plan could recognize a proportionate share of total pension expense of \$192,072,941 and \$193,026,507 for their fiscal years beginning after June 15, 2018 and 2017, respectively.

## 6. Actuarial Methods and Assumptions

The information presented in the aforementioned schedules was determined as part of the 2018 and 2017 actuarial valuation prepared by Buck Global, LLC (Buck) at June 19, 2019 and Conduent at June 8, 2018, respectively.

Additional information related to the above actuarial valuation, as applicable for both years presented, is as follows:

	2018	2017
Actuarial cost method	Frozen entry age	Frozen entry age
Rate of investment return	4.78%, net of expenses	4.78%, net of expenses
Participant account interest		
_ crediting rate	5.00%	5.00%
Turnover or withdrawal rates	Various by age and	Various by age and
	year of membership	year of membership
Martality and death rates	based on actual	based on actual
Mortality and death rates	a) RP-2014 Combined Healthy Mortality Table	a) RP-2014 Combined Healthy Mortality Table
	(rolled back to 2006) for	(rolled back to 2006) for
	active Members, and	active Members, and
	deferred vested	deferred vested
	Members, projected	Members, projected
	fully generationally	fully generationally
	using projection scale	using projection scale
	MP- 2015.	MP- 2015.
	b) RP-2014 Combined	b) RP-2014 Combined
	Healthy Mortality Table	Healthy Mortality Table
	(rolled back to 2006) for	(rolled back to 2006) for
	Inactive (In Receipt)	Inactive (In Receipt)
	Members adjusted by an additional 10% to	Members adjusted by an additional 10% to
	account for the higher	account for the higher
	mortality experienced	mortality experienced
	by the Plan, projected	by the Plan, projected
	fully generationally	fully generationally
	using projection scale	using projection scale
	MP-2015.	MP-2015.
Disability rates	RP-2014 Disability	RP-2014 Disability
	Mortality Table (rolled	Mortality Table (rolled
	back to 2006) projected	back to 2006) projected
	fully generationally	fully generationally
	using projection scale	using projection scale
	MP-2015.	MP-2015.

	2018	2017
Rates of retirement between the ages of 55 and 70	Various based on actual experience of the System	Various based on actual experience of the System
Rate of salary increases	Salaries are assumed to increase at the rate of 5.0% per year for the first five years of employment and at the rate of 3.5% per year thereafter	Salaries are assumed to increase at the rate of 5.0% per year for the first five years of employment and at the rate of 3.5% per year thereafter
Asset valuation method	The assumed yield method of valuing assets	The assumed yield method of valuing assets

The Unfunded Actuarial Accrued Liability ("UFAAL") was originally determined and frozen as of January 1, 1981. Effective January 1, 2006, the UFAAL was re-determined. The UFAAL is being amortized over thirty (30) years.

### Benefit changes effective as of August 28, 2017:

- 1. Reduce the "Rule of 85" to "Rule of 80."
- 2. Change the percent of pay benefit multiplier from 2.00 percent of Average Final Compensation to 1.75 percent of Average Final Compensation for members hired on or after January 1, 2018.

#### Contribution changes effective as of August 28, 2017:

- 1. Increase the employee contribution requirement from a flat 5.00 percent of compensation during 2017 to 9.00 percent in 0.50 percent annual increments for employees hired before January 1, 2018.
- 2. Set employee contribution rate to a flat 9.00 percent for employees hired on or after January 1, 2018.
- 3. Set the employer contribution rate to a flat 16.00 percent of covered payroll for plan year 2018 with annual decreases of 0.50 percent until reaching 9.00 percent of covered payroll.

#### Assumption changes effective as of January 1, 2017:

1. Revised investment return assumption of 7.50 percent to a blended discount rate of 4.78 percent. Blended discount rate is a municipal bond rate of 3.16 percent and long-term rate of return of 7.50 percent.

As of December 31, 2017, cumulative impact of changes from the prior valuation was an increase in the Entry Age Normal Liability by approximately \$72.7 million.