# SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

December 31, 2019



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### Mayer Hoffman McCann P.C.

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

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

#### Report on Schedules

We have audited the accompanying schedule of employer allocations of the Public School Retirement System of the School District of Kansas City, Missouri (the "Retirement System") as of and for the year ended December 31, 2019, and the related notes. 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 pension expense (specified column totals) as of and for the year ended December 31, 2019 included in the accompanying schedule of pension amounts by employer of the Retirement System, and the related notes.

#### Management's Responsibility for the Schedules

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 schedule of employer allocations and the specified column totals included in the schedule of pension amounts by employer based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the schedule of employer allocations and specified column totals included in the schedule of pension amounts by employer, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the schedule of employer allocations and specified column totals included in the schedule 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 entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the schedule of employer allocations and specified column totals included in the schedule 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 opinion.



#### **Opinion**

In our opinion, the 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 pension expense for the total of all participating entities for the Retirement System as of and for the year ended December 31, 2019, in accordance with accounting principles generally accepted in the United States of America.

#### Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the Retirement System as of and for the year ended December 31, 2019, and our report thereon, dated June 2, 2020, expressed an unmodified opinion on those financial statements.

#### Restriction of Use

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

Kansas City, Missouri September 3, 2020

Mayer Hoffman McCann P.C.

### **SCHEDULE OF EMPLOYER ALLOCATIONS**

As of and for the year ended December 31, 2019

Employer	E Co	Employer Allocated Proportion		
Academie Lafayette	\$	584,577	2.727637%	
Academy for Integrated Arts	Ψ	123,268	0.575169%	
Allen Village Charter		329,601	1.537919%	
Brookside Charter School		502,544	2.344871%	
Citizens of the World Kansas City		197,914	0.923467%	
Crossroads Charter Schools		571,924	2.668598%	
DeLaSalle Charter School 2.0		80,853	0.377260%	
Ewing Marion Kauffman School		718,760	3.353735%	
Frontier Schools		1,201,422	5.605837%	
Genesis Schools, Inc.		206,693	0.964430%	
Gordon Parks Elementary		177,318	0.827366%	
Guadalupe Centers Schools		826,725	3.857500%	
Hogan Preparatory Academy		587,314	2.740408%	
Hope Leadership Academy		64,417	0.300570%	
Kansas City Girl's Preparatory		33,798	0.157702%	
Kansas City International Academy		520,425	2.428304%	
Kansas City Neighborhood Academy		104,081	0.485642%	
Kansas City Public Library		784,734	3.661570%	
Kansas City Public Schools		12,103,864	56.476645%	
KIPP Endeavor Academy		396,303	1.849150%	
Lee A. Tolbert Community Academy		304,960	1.422944%	
Pathway Academy		54,964	0.256462%	
Scuola Vita Nuova		232,594	1.085284%	
University Academy		722,574	3.371531%	
Total	\$	21,431,627	100.000000%	

NOTE: The Retirement System had contributions of \$57,210 for 2019; however, this amount was not used in determining the Schedule of Employer Allocations.

#### SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

As of and for the year ended December 31, 2019

		Deferred Outflows of Resources					Deferred Inflows of Resources											
Employer	12/31/2019 Net Pension Liability	Differei Betwe Expec and Ac Experie	en ted tual	Net Difference Between Projected and Actual Earnings on Pension Plan Investments		Changes in Assumptions		Changes in Proportion	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	_	Net Difference Between Projected and Actual Earnings on Pension Plan Investments		Changes in Assumptions		Changes in Proportion	b	Total Deferred nflows of Resources
Academie Lafayette	\$ 9,107,255	\$	_	\$ 1,416,559	\$	103,481	\$	164,368	\$ 1,684,408	\$ 71,234	\$	1,946,716	\$	236,775	\$	_	\$	2,254,725
Academy for Integrated Arts	1,920,421	Ψ		298,706	Ψ	21,821	Ψ	125,056	445,583	15,021	Ψ	410,498	Ψ	49.928	Ψ	_	Ψ	475,447
Allen Village Charter	5,134,927		-	798,696		58,345		123,030	857,041	40,164		1,097,613		133,501		219,418		1,490,696
Benjamin Banneker Charter Academy	0,104,027		_	700,000		-		_	-	40,104		1,007,010		100,001		1,339,202		1,339,202
Brookside Charter School	7,829,245		-	1,217,775		88,960		305,084	1,611,819	61,238		1,673,535		203,549		-		1,938,322
Citizens of the World Kansas City	3,083,345		-	479,589		35.034		508,649	1,023,272	24,117		659,078		80,162		_		763,357
Crossroads Charter Schools	8,910,131		-	1,385,898		101,241		665,004	2,152,143	69,692		1,904,579		231,650		-		2,205,921
DeLaSalle Charter School			-	-								-				524,997		524,997
DeLaSalle Charter School 2.0	1,259,627		-	195,925		14,312		294,978	505,215	9,852		269,251		32,748		306,638		618,489
Ewing Marion Kauffman School	11,197,723		-	1,741,714		127,234		709,193	2,578,141	87,585		2,393,562		291,124		-		2,772,271
Frontier Schools	18,717,221		-	2,911,310		212,674		1,032,253	4,156,237	146,400		4,000,888		486,620		-		4,633,908
Genesis Schools, Inc.	3,220,116		-	500,863		36,588		_	537,451	25,187		688,314		83,718		105,487		902,706
Gordon Parks Elementary	2,762,478		-	429,681		31,389		16,133	477,203	21,607		590,492		71,820		15,828		699,747
Guadalupe Centers Schools	12,879,733		-	2,003,337		146,346		1,242,955	3,392,638	100,741		2,753,099		334,854		-		3,188,694
Hogan Preparatory Academy	9,149,895		-	1,423,191		103,965		-	1,527,156	71,568		1,955,830		237,884		899,703		3,164,985
Hope Leadership Academy	1,003,568		-	156,097		11,403		-	167,500	7,850		214,517		26,091		104,470		352,928
Kansas City Girl's Preparatory	1,053,093		-	163,800		11,966		631,315	807,081	8,237		225,103		27,379		-		260,719
Kansas City International Academy	8,107,816		-	1,261,104		92,125		367,982	1,721,211	63,417		1,733,081		210,791		-		2,007,289
Kansas City Neighborhood Academy	-		-	-		-		67,061	67,061	-		-		-		1,607,051		1,607,051
Kansas City Public Library	12,225,546		-	1,901,583		138,912		-	2,040,495	95,624		2,613,264		317,846		99,208		3,125,942
Kansas City Public Schools	188,568,788		-	29,330,331		2,142,607		598,017	32,070,955	1,474,925		40,307,405		4,902,516		130,861		46,815,707
KIPP Endeavor Academy	6,174,091		-	960,329		70,153		165,029	1,195,511	48,292		1,319,739		160,517		-		1,528,548
Lee A. Tolbert Community Academy	4,751,038		-	738,985		53,984		11,788	804,757	37,161		1,015,555		123,520		27,413		1,203,649
Pathway Academy	-		-	-		-		-	-	-		-		-		1,581,965		1,581,965
Scuola Vita Nuova	3,623,635		-	563,627		41,173		321,768	926,568	28,343		774,568		94,209		-		897,120
University Academy	11,257,140			1,750,956		127,909	_	-	1,878,865	88,050	_	2,406,263		292,669		264,392		3,051,374
Total	\$ 331,936,832	\$	-	\$ 51,630,056	\$	3,771,622	\$	7,226,633	\$ 62,628,311	\$ 2,596,305	\$	70,952,950	\$	8,629,871	\$	7,226,633	\$	89,405,759

### SCHEDULE OF PENSION AMOUNTS BY EMPLOYER (continued)

For the year ended December 31, 2019

	Pension Expense										
Employer		roportionate Share of Plan Pension Expense	A	Net Recognition of Deferred amounts from Changes in Proportionate Share	_	Employer Pension Expense Allocated		lilitary Service chase Payments	Total Employer Pension Expense		
Academie Lafayette	\$	1,379,956	\$	123,120	\$	-	\$	-	\$ 1,503,076	3	
Academy for Integrated Arts		290,987		124,191		-		-	415,178	3	
Allen Village Charter		778,058		(285,675)		-		-	492,383	3	
Benjamin Banneker Charter Academy		-		(1,320,007)		-		-	(1,320,007	7)	
Brookside Charter School		1,186,309		370,964		-		-	1,557,273	3	
Citizens of the World Kansas City		467,197		459,511		-		-	926,708	3	
Crossroads Charter Schools		1,350,088		858,480		-		-	2,208,568	3	
DeLaSalle Charter School		-		(1,089,558)		-		-	(1,089,558	3)	
DeLaSalle Charter School 2.0		190,862		354,826		-		-	545,688	3	
Ewing Marion Kauffman School		1,696,710		945,337		-		-	2,642,047	7	
Frontier Schools		2,836,085		1,292,262		-		-	4,128,347	7	
Genesis Schools, Inc.		487,921		(124,052)		-		-	363,869	)	
Gordon Parks Elementary		418,578		(41,790)		-		-	376,788		
Guadalupe Centers Schools		1,951,573		1,121,183		-		-	3,072,756	3	
Hogan Preparatory Academy		1,386,417		(662,867)		-		-	723,550		
Hope Leadership Academy		152,063		(112,140)		-		-	39,923		
Kansas City Girl's Preparatory		159,568		415,338		-		-	574,906	3	
Kansas City International Academy		1,228,519		321,223		-		-	1,549,742	2	
Kansas City Neighborhood Academy		-		(902,696)		-		-	(902,696	-	
Kansas City Public Library		1,852,448		(173,484)		-		-	1,678,964		
Kansas City Public Schools		28,572,467		(734,857)		-		-	27,837,610		
KIPP Endeavor Academy		935,515		333,799		-		-	1,269,314		
Lee A. Tolbert Community Academy		719,890		(63,682)		=		-	656,208		
Pathway Academy		-		(1,256,740)		-		-	(1,256,740		
Scuola Vita Nuova		549,063		299,823		-		-	848,886		
University Academy		1,705,713		(252,509)	_	-		<u> </u>	1,453,204		
Total	\$	50,295,987	\$	-	\$	-	\$	-	\$ 50,295,987	7	

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

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

General - The Retirement System is a cost-sharing multiple-employer defined benefit pension plan (the "Plan"), which was established by the General Assembly of the State of Missouri and is exempt from the provisions of the Employee Retirement Income Security Act of 1974. The Board of Trustees of the Retirement System ("Board of Trustees") administers and operates the Plan in accordance with the statutes of the State of Missouri. During the year ended December 31, 2019, participating employers consisted of the School District of Kansas City, Missouri; the Kansas City, Missouri Public Library District; the Retirement System; and the following charter schools: Academie LaFayette, Academy for Integrated Arts, Allen Village Charter School, Brookside Charter School, Citizens of the World Kansas City, Crossroads Charter Schools, DeLaSalle Charter School, Ewing Marion Kauffman School, Frontier Schools, Genesis School, Inc., Gordon Parks Elementary, Guadalupe Center Schools, Hogan Preparatory Academy, Hope Leadership Academy, Kansas City Girl's Preparatory Academy (opened August 1, 2019), Kansas City International Academy, Kansas City Neighborhood Academy (closed June 30, 2019), KIPP Endeavor Academy, Lee A. Tolbert Community Academy, Pathway Academy (closed June 30, 2019), Scuola Vita Nuova, and University Academy.

**Eligibility** - All regular, full-time employees of the participating employers become members of the Plan as a condition of employment if they are in a position requiring at least 25 hours of work per week and nine calendar months per year. Employees who retire after June 30, 1999 and were hired after 1961, but before January 1, 2014 are members of Plan B. Employees hired after January 1, 2014 are members of Plan C. At January 1, 2019, the Plan's membership consisted of:

3,898
4,113
531
2,784
1,326

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

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

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

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

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

#### Compensation

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

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

#### **Normal retirement**

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

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

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

#### Early retirement

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

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

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

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

#### **Disability retirement**

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

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

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

#### Termination benefits - vested

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

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

#### Termination benefits - non-vested

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

#### **Death benefit**

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

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

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

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

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

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

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

#### Death benefit (continued)

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

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

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

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

The Board of Trustees reserves the right, at its sole discretion, not to award any Benefit Increase Adjustment or other supplements for any year, even if the statutory requirements for an increase are satisfied, or to provide increases in greater or lesser amounts than prescribed by this policy. For the year ended December 31, 2019 there was no Benefit Increase Adjustment or an extra check issued to eligible retirees.

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

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

**Basis of accounting** - The schedule of employer allocations and the schedule of pension amounts by employer present amounts that are elements of the financial statements of the Retirement System or of its participating employers. Accordingly, they do not purport to be a complete presentation of the financial position or changes in financial position of either the Retirement System or its participating employers.

**Use of estimates** - The amounts reported in the schedule of employer allocations and the schedule of pension amounts by employer were prepared in accordance with accounting principles generally accepted in the United States of America. Such preparation requires management to make estimates and assumptions related to the reported amounts. Accordingly, actual results may differ from those estimates.

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

#### (3) Net pension liability

The components of the net pension liability of the participating employers as of December 31, 2019 were as follows:

Total pension liability \$ 994,022,672 Less: Fiduciary net position 662,085,840 Net pension liability \$ 331,936,832

Plan fiduciary net position as a percentage of total pension liability

#### (4) Actuarial assumptions

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

Mortality:

January 1, 2019 Entry Age Normal Level Percent of Pay, Layered 28 years 5-year Smoothed Market Value

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

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

66.61%

The actuarial assumptions used in the January 1, 2019 valuation were adopted by the Board from the results of an actuarial experience study covering the five-year period ended December 31, 2015 (dated October 3, 2016).

The long-term expected rate of return on pension plan investments is reviewed as part of the regular experience study prepared by the Retirement System. Several factors are considered in evaluating the long-term rate of return assumption, including long-term historical data, estimates inherent in current market data, and an analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of investment expense and inflation), along with estimates of variability and correlations for each asset class, were developed by the Retirement System's investment consultant. These ranges are combined to produce the 10-year long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the Retirement System's target asset allocation as of December 31, 2019 (see the discussion of the pension plan's investment policy) are summarized in the following table:

## NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

### (4) <u>Actuarial assumptions</u> (continued)

Asset Class	Target Allocation	<u>1</u>	10-Year Long-term Expected Real Rate of Return					
US Large Cap Equity	10.50	%	6.20 %					
US Mid Cap Equity	6.00	%	6.80 %					
US Small Cap Equity	6.00	%	7.30 %					
International Developed Equity	12.00	%	7.00 %					
Emerging Market Equity	10.00	%	9.90 %					
Core Fixed Income	10.00	%	2.00 %					
Global Fixed Income	5.00	%	1.80 %					
High Yield Bonds	2.50	%	4.20 %					
Multi-Asset Class	13.50	%	5.20 %					
Hedge Fund of Funds	5.00	%	3.80 %					
Private Equity	7.50	%	10.40 %					
Real Estate - Core	6.00	%	4.80 %					
Real Estate - Value Add	3.00	%	7.50 %					
Real Estate - Opportunistic	3.00	%	9.60 %					
=	100.00	:						

**Discount rate** - The discount rate used to measure the total pension liability as of December 31, 2019 was 7.75%. The projection of cash flows used to determine the discount rate assumed that contributions from the Plan members will be made at the current contribution rate and that contributions from employers will be made at contractually required rates, actuarially determined. Based on those assumptions, the Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current Plan members. Therefore, the long-term expected rate of return on Plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

# NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

### (4) <u>Actuarial assumptions</u> (continued)

Sensitivity of the net pension liability to changes in the discount rate - The following represents the net pension liability of participating entities as of December 31, 2019, calculated using the discount rate assumption, as well as what the net pension liability would be if it were calculated using a discount rate that is one percentage point lower or one percentage point higher than the current assumption.

	Discount Rate	Participating entities' net pension liabilty
1% decrease	6.75%	\$429,115,345
Current discount rate	7.75%	331,936,832
1% increase	8.75%	249,567,057

# NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

### (5) Collective deferred outflows of resources and deferred inflows of resources

A summary of the collective deferred outflows of resources and deferred inflows of resources as of December 31, 2019 are included below. The actual experience and assumption change impacts are recognized over the average expected remaining service life of active and inactive Plan members at the beginning of the measurement period, while investment gains/losses are recognized equally over five years.

	Deferred Outflows of Resources							
		December 31,						December 31,
	_	2018	_	Additions	-	Recognition	-	2019
Differences between expected								
and actual experience	_		_		_		_	
2015 Base	\$	-	\$	-	\$	-	\$	-
2016 Base		-		-		-		-
2017 Base		1,030,313		-		1,030,313		-
2018 Base		-		-		-		-
2019 Base						-		-
Total		1,030,313		-		1,030,313		-
Changes of assumptions								
2015 Base	\$	-	\$	-	\$	-	\$	-
2016 Base		-		-		-		-
2017 Base		16,315,253		-		16,315,253		-
2018 Base		10,887,891		-		7,116,269		3,771,622
2019 Base		-		-		-		-
Total		27,203,144		-		23,431,522		3,771,622
Differences between projected								
and actual earnings								
2015 Base	\$	12,770,435	\$	-	\$	12,770,435	\$	-
2016 Base		1,851,403		-		925,702		925,701
2017 Base		-		-		-		-
2018 Base		67,605,807		-		16,901,452		50,704,355
2019 Base		-		-		-		-
Total		82,227,645		-		30,597,589		51,630,056
Changes in proportion								
2015 Base	\$	-	\$	_	\$	-	\$	-
2016 Base		-		_		_		-
2017 Base		1,224,357		_		1,224,357		-
2018 Base		4,471,184		_		2,922,341		1,548,843
2019 Base		-		9,413,178		3,735,388		5,677,790
Total		5,695,541		9,413,178		7,882,086		7,226,633
Total	\$	116,156,643	\$	9,413,178	\$	62,941,510	\$	62,628,311

# NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

### (5) <u>Collective deferred outflows of resources and deferred inflows of resources</u> (continued)

	Deferred Inflows of Resources								
	I	December 31,						December 31,	
	_	2018		Additions	_	Recognition		2019	
Differences between expected					_			_	
and actual experience									
2015 Base	\$	-	\$	-	\$	-	\$	-	
2016 Base		-		-		-		-	
2017 Base		-		-		-		-	
2018 Base		7,046,632		-		4,605,642		2,440,990	
2019 Base		-		257,496		102,181		155,315	
Total		7,046,632		257,496		4,707,823		2,596,305	
Changes of assumptions									
2015 Base	\$	-	\$	-	\$	-	\$	-	
2016 Base		-		-		-		-	
2017 Base		-		-		-		-	
2018 Base		-		-		-		-	
2019 Base		-		14,307,418	_	5,677,547		8,629,871	
Total		-		14,307,418		5,677,547		8,629,871	
Differences between projected									
and actual earnings									
2015 Base	\$	-	\$	-	\$	-	\$	-	
2016 Base		-		-		-		-	
2017 Base		33,114,370		-		11,038,124		22,076,246	
2018 Base		-		-		-		-	
2019 Base		-		61,095,880		12,219,176		48,876,704	
Total		33,114,370		61,095,880		23,257,300		70,952,950	
Changes in proportion									
2015 Base	\$	-	\$	-	\$	-	\$	-	
2016 Base		_		-		-		-	
2017 Base		1,224,357		-		1,224,357		-	
2018 Base		4,471,184		-		2,922,341		1,548,843	
2019 Base		_		9,413,178		3,735,388		5,677,790	
Total		5,695,541		9,413,178		7,882,086		7,226,633	
Total	\$	45,856,543	\$	85,073,972	\$	41,524,756	\$	89,405,759	

# NOTES TO SCHEDULE OF EMPLOYER ALLOCATIONS AND SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

### (5) <u>Collective deferred outflows of resources and deferred inflows of resources</u> (continued)

The following provides the net deferred outflows/(inflows) of resources as of December 31, 2019, that will be recognized in pension expense in future years:

Year Ending December 31:	Deferred Outflows of Resources	Deferred Inflows of Resources	Net Deferred Outflows (Inflows) of Resources
2020	\$ 21,598,775	\$ 31,478,018	\$ (9,879,243)
2021	16,901,452	26,262,756	(9,361,304)
2022	16,901,452	12,219,176	4,682,276
2023	-	12,219,176	(12,219,176)
2024	-	-	-
Thereafter	-	-	-

### (6) <u>Collective pension expense</u>

Collective pension expense for the year ended December 31, 2019 is as follows:

Service cost	\$ 18,024,270
Interest on the total pension liability	72,760,057
Expensed portion of current-period difference between expected and actual experience in the total pension	
liability	(102,181)
Expensed portion of current-period assumption changes	(5,677,547)
Member contributions	(18,524,657)
Projected earnings of plan investments	(44,937,838)
Expenses portion of current-period difference between projected and actual earnings on plan investments	(12,219,176)
Administrative expenses	1,546,381
Other	11,020
Recognition of beginning deferred outflows resources	55,059,424
Recognition of beginning deferred inflows resources	(15,643,766)
Total pension expense	\$ 50,295,987