

**Public School Retirement System
of the City of St. Louis**



**Public School Retirement System
of the City of St. Louis, Missouri**

A Pension Trust Fund for Public School Employees

Comprehensive Annual Financial Report

For the Fiscal Years Ended: December 31, 2020 & 2019

Public School Retirement System of the City of St. Louis

A Pension Trust Fund for
Public School Employees

3641 Olive Street, Suite 300
St. Louis, Missouri 63108-3601
(314) 534-7444
www.psrstl.org

Comprehensive Annual Financial Report

For the Fiscal Years Ended

December 31, 2020 and 2019

Prepared by:

Susan Kane, CEBS
Executive Director

Mission Statement

The mission of the Public School Retirement System of the City of St. Louis is to enhance the well-being and financial security of its members, retirees and beneficiaries through benefit programs and services which are soundly financed and prudently administered in an effective and efficient manner.

Mission Statement Principles

The Retirement System adopts the following principles advocated by the National Council on Teacher Retirement, and with respect to such principles hereby pledges as follows:

1. ***Courteous Service.*** To give members prompt and courteous service and provide complete and accurate information.
2. ***Member Statements.*** To provide each active member with an annual statement that includes the member's accrued service credit, employee contributions, and other related information.
3. ***Information.*** To provide new participants in the system a summary plan description that clearly and simply summarizes the benefit provisions of the plan. The System will make available information on changes made in benefits.
4. ***Annual Reports.*** Full disclosure of financial, actuarial, and investment information in a detailed annual report that will be available for members, elected officials, and the public.
5. ***Financial Audits.*** To prepare or cause to be prepared an annual financial statement in accordance with generally accepted accounting principles and have an annual audit of the System's financial statement in accordance with generally accepted auditing standards.
6. ***Actuarial Studies.*** To have an annual or biennial actuarial valuation performed by an enrolled actuary in accordance with actuarial standards and an actuarial experience study at least every five years.
7. ***Adequate Funding.*** To work to obtain adequate funding of all promised benefits and to ensure the financial integrity of this System.
8. ***Independence of Retirement Systems.*** To work for a retirement system which functions as an independent retirement trust, separate from state and local government. Such independence includes the power of trustees to set actuarial assumptions, appoint professionals such as actuaries and attorneys on whom they must rely to carry out their responsibilities, and to establish a budget for the System which ensures the delivery of high quality, cost-effective service to their members.
9. ***Exclusive Benefit.*** To act for the exclusive benefit of the members as fiduciaries entrusted with the management and payment of retirement benefits.
10. ***Prudent Investments.*** To adopt comprehensive objectives, methods for evaluation of performance, and policies which ensure both the prudent investment of plan assets and the achievement of the highest possible investment return.
11. ***Ethical Conduct.*** To adhere to the highest standards of conduct set out in the terms of the trust, state statute or other law.
12. ***State and Local Government Authority.*** To support the continuation of state and local pension plan oversight by the respective state or local government to ensure that decisions are made at the appropriate level of government.

Public School Retirement System of the City of St. Louis
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Fiscal Years 2020 and 2019

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“The mission of the Public School Retirement System of the City of St. Louis is...



Government Finance Officers Association

Certificate of Achievement
for Excellence
in Financial
Reporting

Presented to

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

For its Comprehensive Annual
Financial Report
For the Fiscal Year Ended

December 31, 2019

Christopher P. Morrill

Executive Director/CEO

Public School Retirement System of the City of St. Louis Comprehensive Annual Financial Report

Fiscal Years 2020 and 2019

Board of Trustees

An eleven-member Board of Trustees is responsible for general administration of the Retirement System and investing System assets. Active members elect five trustees: one administrator, two teachers and two non-teachers. Retired members elect two trustees: one retired teacher and one retired non-teacher. The St. Louis Public Schools (“SLPS”) Board of Education appoints four trustees. Length of term of office is four years. The following individuals serve on the Public School Retirement System of the City of St. Louis Board of Trustees.

<u>Elected by Active Members</u>	<u>Term Ends</u>	<u>Trustee Representation</u>
Bobbie Richardson	12-31-2021	Active Non-teacher
Justin Stein	12-31-2022	Active Non-teacher
Yvette Levy	12-31-2023	Active Administrator
Albert Sanders	12-31-2023	Active Teacher
Sheila Goodwin	12-31-2024	Active Teacher

<u>Elected by Retired Members</u>	<u>Term Ends</u>	<u>Trustee Representation</u>
Joseph Clark	09-30-2021	Retired Non-Teacher
Louis Cross	09-30-2023	Retired Teacher

<u>SLPS Appointments</u>	<u>Term Ends</u>	<u>Trustee Representation</u>
Angela Banks	12-31-2021	SLPS Board of Education
Christina Bennett	12-31-2022	SLPS Board of Education
Donna Jones	12-31-2023	SLPS Board of Education
Regina Fowler	12-31-2024	SLPS Board of Education

**Public School Retirement System
of the City of St. Louis**

3641 Olive Street, Suite 300
St. Louis, MO 63108-3601

Office of the
Executive Director

Phone: (314) 534-7444
Fax: (314) 533-0531

June 1, 2021

To the Board of Trustees and Members of the Retirement System:

I am pleased to present the *Comprehensive Annual Financial Report (Annual Report)* for the Public School Retirement System of the City of St. Louis (“PSRSSTL”, “System”, “fund” or “plan”) for the fiscal years ended December 31, 2020 and December 31, 2019. Management of the System is responsible for the content in this report. To the best of my knowledge, I believe the information in this report is accurate, in all material respects, and presented in a manner that fairly portrays the financial position and operations of the plan for fiscal years 2020 and 2019.

Overview of the Retirement System

The Public School Retirement System of the City of St. Louis was established January 1, 1944. Through acts of the Missouri Legislature, the System provides retirement benefits to employees of the St. Louis Public Schools District, the System, a number of Charter Schools located in the St. Louis Public Schools District and certain past employees of Harris-Stowe State College. The System’s members are covered by Social Security and eligible for Social Security benefits in addition to retirement benefits provided by the plan.

Financial Information

An independent certified accounting firm performs a financial audit each year. The financial statements of the System are prepared in conformity with accounting principles generally accepted in the U.S.A. (GAAP) within guidelines established by the Governmental Accounting Standards Board (GASB). Management uses internal controls to help protect the System’s assets from loss due to unauthorized use or erroneous disposition. These internal controls are constrained to keep costs from outweighing the benefits derived from them so there are natural limits to preventing all errors or instances of fraud. Management is confident that within reason, not absolute assurance, the financial statements meet the important objective of providing information free of material misstatements. Please refer to the Management Discussion and Analysis (“MD&A”) in the Financial Section for an overview of the System’s financial highlights that includes a review of the additions and deductions from the plan during 2020 and 2019.

Investment Activities

The overall investment return for the plan during 2020 was 8.9%, which was above the actuarial assumed rate of return of 7.5%. Thus, the investment managers added additional value to the fund for the year. In comparison to other public plans in the Investor Force Universe (IFU), the System’s investment return for 2020 ranked in the top 95% of the IFU while maintaining similar risk as the peer group.

The Board of Trustees governs investments of the fund through the adoption of investment policies and guidelines, amended as needed, that define the plan’s objectives, monitoring procedures and performance measures. The Investment Policies and Operating Guidelines

Letter of Transmittal

lay out specific parameters for performance expectations, eligible investments and portfolio characteristics. Key to the success of this governance is the determination of an Asset Allocation Policy. The policy is reviewed by the Board of Trustees at least annually and modified as needed to maximize returns while minimizing risk within the accepted investment guidelines of the System. Through advice from the Investment Consultant, management and staff are primarily responsible for implementing and monitoring the Asset Allocation Policy adopted by the Board of Trustees. Detailed investment information can be found in the Investment Section.

Funding Status and Valuation Results

The System is a defined benefit plan, which means that certain benefit provisions are used in a formula to determine each member's retirement benefit. The formula to calculate retirement benefits for members hired on or before December 31, 2017, is credited service (years of service) multiplied by average compensation (final average salary for three consecutive years) multiplied by 2% (pension multiplier). For members hired for the first time on or after January 1, 2018, the pension multiplier is 1.75%, which changes the retirement benefits formula for these members.

Each year, the System has an actuarial valuation conducted by an independent Actuary. The actuarial valuation has two main purposes: (1) to determine the annual required contribution (ARC), the portion of covered payroll, that employers must pay during a given year, including actuarially determined contributions that would ensure assets are available for benefit obligations into the future and to guarantee actuarial soundness of the fund and (2) to measure the relative financial health of the System.

To determine the relative financial health of the System, the Actuary calculates the plan's actuarial accrued liability using the System's benefit provisions and actuarial assumptions in effect at the time of the calculation. The actuarial accrued liability is then compared to the actuarial value of assets to arrive at a percentage or Funded Ratio. The Funded Ratio measures the ability of the System to pay retirement benefits over the course of time, usually the next 30 years. For plan year 2020, the Funded Ratio was 78.6%, which is the fourth year in a row that the Funded Ratio for the System remained below 80%. The main reason for the low measurements is due to the downgrade of the retirement system's assumed rate of return (discount rate) from 8.0% to 7.5%, beginning in plan year 2017.

The Actuary calculates an ARC that is adequate to fund the normal costs of the plan that includes the unfunded actuarial accrued liability amortized over a 30-year period. The Actuary presents the annual Actuarial Valuation Report to the Board of Trustees for consideration. Once the Board of Trustees accepts the actuarial valuation for the year, the employers are notified of the ARC as governed by state statute.

The historic Annual Required Contribution (ARC) percentage rates of covered compensation and corresponding dollar amounts determined by the Actuary, and accepted by the Board of Trustees, for the past three fiscal years are summarized as follows:

<u>Fiscal Year</u>	<u>ARC (%)</u>	<u>ARC (\$)</u>	<u>ADC (%) *</u>	<u>ADC (\$) *</u>
2018	19.10%	\$49,693,589	NA	NA
2019	16.00%	\$42,523,785	17.72%	\$47,096,163
2020	15.50%	\$40,946,007	18.74%	\$49,429,863

* Due to legislative changes in 2017 effecting annual required contribution (ARC) calculations, in 2018, the Actuary added an actuarial determined contribution (ADC)

Letter of Transmittal

component to the System's Annual Actuarial Valuation Report. It is important to note that the Actuary calculates the System's ARC for the next fiscal year; therefore, the System's contributions are recognized one fiscal year in arrears. Detailed actuarial information can be found in the Actuarial Section.

Legislative Information

There were no major legislative changes in 2020 that directly affected the System. The last major change to the System's plan provisions occurred in 2017. For more details on the 2017 changes, please refer to the legislative history of the plan summarized on the last page of the Statistical Section.

Professional Services

Certain professional services are provided to the System by retained consultants. The required opinion letters from the Actuary, Buck Global, LLC, and Independent Certified Public Accountants, Anders Minkler Huber & Helm LLP, are contained in the appropriate sections of this report.

The retained consultants that provide professional services to the System appear at the end of this section. Investment professionals that provide brokerage and investment management services to the System can be found on pages 60 & 61 in the Investment Section.

Certificate of Achievement

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the System for its comprehensive annual financial report for the fiscal year ended December 31, 2019. This was the ninth year the System has achieved this prestigious award. In order to be awarded a Certificate of Achievement, the System must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both generally accepted accounting principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. The System believes our current comprehensive annual financial report continues to meet the Certificate of Achievement Program's requirements and the System is submitting it to GFOA to determine its eligibility for another certificate.

Acknowledgements

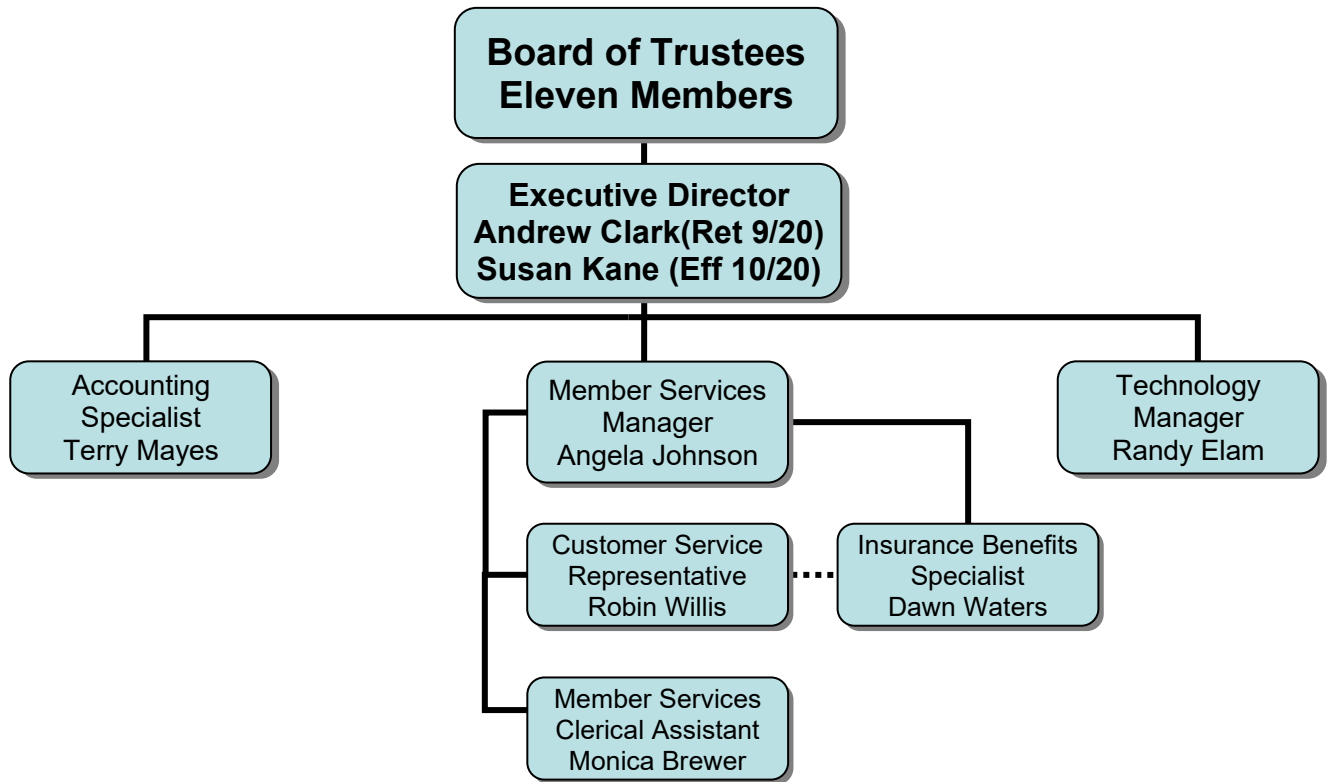
I would like to thank the Board of Trustees, staff and consultants for their assistance in preparing this report. The dedication of these groups contributes to the System's continued stability.

Sincerely,



Susan Kane
Executive Director

Organizational Chart



..... Denotes some work-flow supervision

Public School Retirement System of the City of St. Louis
Comprehensive Annual Financial Report
Fiscal Years 2020 and 2019

Providers of Professional Services

Actuarial Services

Buck Global, LLC

Michael Ribble

St. Louis, MO

Legal Counsel

Hartnett Reyes-Jones, L.L.C.

Jamie Reyes-Jones

St. Louis, MO

Auditor

Anders Minkler Huber & Helm LLP

Jeanne M. Dee, CPA/CGMA

St. Louis, MO

Property Management

CB Richard Ellis

St. Louis, MO

Insurance Consultant

Gallagher Benefit Services, Inc.

(A division of Arthur J. Gallagher & Co.)

Mark Von Vogt

Boston, MA

Computer Programming Consultant

Jupiter Consulting Services, LLC

St. Louis, MO

Investment Consultant

NEPC, LLC

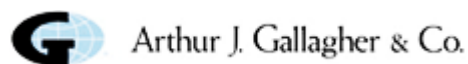
Kristin Finney-Cooke

Chicago, IL

Computer Networking Consultant

Blade Technologies, Inc.

St. Louis, MO



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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 Financial Statements

We have audited the accompanying financial statements of Public School Retirement System of the City of St. Louis (the "System"), which comprise the statements of fiduciary net position as of December 31, 2020 and 2019, and the related statements of changes in fiduciary net position for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

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

Auditors' Responsibility

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

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

Independent Auditor's Report

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of Public School Retirement System of the City of St. Louis as of December 31, 2020 and 2019, and the changes in it's fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis and the other required supplementary information, as listed in the Table of Contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context.

We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audits of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Supplementary Information

Our audits were conducted for the purpose of forming an opinion on the System's basic financial statements. The other supplementary information on pages 44 - 50 is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The other supplementary information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. Such information has been subjected to the auditing procedures applied in the audits of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the other supplementary information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.



April 19, 2021

Management Discussion and Analysis

The Management Discussion and Analysis (“MD&A”) for the Public School Retirement System of the City of St. Louis (“PSRSSTL”) provides an overview of PSRSSTL financial activities for the fiscal year ended December 31, 2020. This MD&A is presented as required supplementary information to the financial statements and should be read in conjunction with the PSRSSTL financial statements, notes to the financial statements, required supplementary information, and other supplementary information.

The basic financial statements contained in this section of the MD&A consist of:

- The Condensed Statements of Fiduciary Net Position illustrate the System's assets, liabilities, and resulting fiduciary net position where $\text{Assets} - \text{Liabilities} = \text{Fiduciary Net Position}$ held in trust for pension benefits available at the end of a fiscal year. These statements are a snapshot of the financial position of the System at specific points in time.
- The Condensed Statements of Changes in Fiduciary Net Position summarize the System's financial transactions throughout a fiscal year where $\text{Additions} - \text{Deductions} = \text{Change in Fiduciary Net Position}$. These statements support the change from the prior year's net position on the Statements of Fiduciary Net Position.
- The Notes to the Financial Statements are an integral part of these basic financial statements and contain information that helps better understand them.
- The required supplementary MD&A information, the Required Supplementary Information, and Other Supplementary Information following the Notes to the Financial Statements provide detailed historical information that is useful in evaluating the condition of the retirement plan administered by PSRSSTL.

The System's fiduciary net position was \$914,776,954 at December 31, 2020, which represents an increase of \$21,737,265 from December 31, 2019. This increase was due to investment returns during the 2020 fiscal year that were far above the System's assumed rate of return. The performance results increased the System's asset values for most investment categories at December 31, 2020.

The System's investment returns were 8.9% in fiscal year 2020, 16.8 in fiscal year 2019, and (5.0%) in fiscal year 2018. The System's investment return in fiscal year 2020, when compared to fiscal year 2019, represents volatility in investment values for most asset categories as experienced by the financial markets during the one-year period. Despite a downturn in the financial markets early in the fiscal year due to the pandemic, returns rebounded by the end of the year. Predicting conditions in the marketplace is always challenging yet the Board of Trustees stands behind a sound Asset Allocation Policy by remaining focused on active monitoring of its money managers and long-term investment objectives. The actuarial assumed rate of return set by the Board of Trustees remained at 7.5% for fiscal year 2020.

Additions to fiduciary net position were \$136.3 million, \$188.6 million and \$21.4 million for fiscal years 2020, 2019 and 2018, respectively. The two highest additions to fiduciary net position in 2020 were net investment income of \$69.4 million and employer contributions of \$41.8 million. The main additions to fiduciary net position in 2019 were net investment income of \$126.2 and employer contributions \$43.9 million of member contributions. The main additions to fiduciary net position during 2018 were \$48.8 million of employer contributions and \$14.2 million of member contributions.

Management Discussion and Analysis

Deductions from fiduciary net position were 114.5 million, \$115.0 million and \$116.0 million in fiscal years 2020, 2019 and 2018, respectively. While deductions from fiduciary net position decreased only slightly from 2020 to 2019, decrease in disability and refunds to members accounted for nearly 90% of this decrease. Almost 80% of the decrease of \$1,043,805 in deductions from fiduciary net position between fiscal years 2019 and 2018 was due to the decrease in operating expenses and contribution refunds paid to terminated or deceased members in fiscal year 2019.

FINANCIAL STATEMENTS

The PSRSSTL financial report consists of two financial statements, (1) the Statements of Fiduciary Net Position, and (2) the Statements of Changes in Fiduciary Net Position. The Statements of Fiduciary Net Position provide details concerning PSRSSTL assets and liabilities other than long-term benefit obligations. However, PSRSSTL assets are the only source available to the System to pay pension benefits. The Statements of Changes in Fiduciary Net Position provide details regarding PSRSSTL financial activity during fiscal year 2020 that caused the change in fiduciary net position from fiscal year 2019 to fiscal year 2020.

Additionally, the financial report contains notes, supplementary information and actuarial data that provide further information to use while analyzing the System's financial statements.

FINANCIAL ANALYSIS

On December 31, 2020, total assets and deferred outflow of resources of the System were \$917,570,190. Total assets consisted of cash, receivables, investments and an office building. When compared to fiscal year 2019, total assets and deferred outflows in fiscal year 2020 increased by 2.5%, or \$21,948,986, and can be attributed to higher than expected investment returns.

On December 31, 2020, total liabilities and deferred inflow of resources of the System were \$2,793,236. Total liabilities consisted of accounts payable and accrued expenses and net pension liability. Total liabilities and deferred inflows in fiscal year 2020, when compared to fiscal year 2019, increased by \$211,721, primarily because of the increase in the System's deferred inflow of resources as required by GASB Statement No. 68.

On December 31, 2020, the fiduciary net position restricted for pensions was \$914,776,954, an increase of 2.4%, or \$21,737,265, from fiscal year 2019.

On December 31, 2019, total assets and deferred outflow of resources of the System were \$895,621,204. Total assets consisted of cash, receivables, investments and an office building. When compared to fiscal year 2018, total assets and deferred outflows in fiscal year 2019 increased by 9.0%, or \$73,588,669, and can be attributed to lower than expected investment returns.

On December 31, 2019, total liabilities and deferred inflow of resources for the System were \$2,581,515. Total liabilities consisted of accounts payable, accrued expenses, and net pension liability. Total liabilities and deferred inflows in fiscal year 2019, when compared to fiscal year 2018, decreased by (0.5)%, or \$(1,127), primarily because of the decrease in the System's net pension liability as required by GASB Statement No. 68.

Management Discussion and Analysis

On December 31, 2019, the fiduciary net position restricted for pensions was \$893,039,689, an increase of 9.0%, or \$73,589,796, from fiscal year 2018.

Condensed Statements of Fiduciary Net Position

	<u>FY 2020</u>	<u>FY 2019</u>	<u>FY 2018</u>	<u>FY 2020 % Change</u>	<u>FY 2019 % Change</u>
Assets					
Cash	\$ 9,863,612	\$ 9,803,323	\$ 9,850,121	0.6 %	(0.5)%
Receivables	822,998	827,629	847,357	(0.6)%	(2.3)%
Investments	904,831,520	882,624,263	808,635,191	2.5 %	9.1 %
Property and building, net	<u>1,571,742</u>	<u>1,623,368</u>	<u>1,680,266</u>	(3.2)%	(3.4)%
Total Assets	<u>917,089,872</u>	<u>894,878,583</u>	<u>821,012,935</u>	2.5 %	9.0 %
Deferred Outflows of Resources					
Deferred outflows of resources	<u>480,318</u>	<u>742,621</u>	<u>1,019,600</u>	(35.3)%	(27.2)%
Total Assets and Deferred Outflows of Resources	<u>917,570,190</u>	<u>895,621,204</u>	<u>822,032,535</u>	2.5 %	9.0 %
Liabilities					
Accounts payable and accrued expenses	867,927	728,909	708,970	19.1 %	2.8 %
Net pension liability	<u>1,051,687</u>	<u>1,621,273</u>	<u>1,727,361</u>	(35.1)%	(6.1)%
Total Liabilities	<u>1,919,614</u>	<u>2,350,182</u>	<u>2,436,331</u>	(18.3)%	(3.5)%
Deferred Inflows of Resources					
Deferred inflows of resources	<u>873,622</u>	<u>231,333</u>	<u>146,311</u>	277.6 %	58.1 %
Total Liabilities and Deferred Inflows of Resources	<u>2,793,236</u>	<u>2,581,515</u>	<u>2,582,642</u>	8.2 %	- %
Fiduciary Net Position	<u>\$ 914,776,954</u>	<u>\$ 893,039,689</u>	<u>\$ 819,449,893</u>	2.4 %	9.0 %

REVENUES – ADDITIONS TO FIDUCIARY NET POSITION

The assets available to finance PSRSSTL pension benefits are accumulated through receipt of employer and member contributions as well as through earnings on investments. For fiscal year 2020, employer contributions were approximately \$41.8 million; member contributions were approximately \$17.6 million; and investments gained a net amount of approximately \$69.4 million. For fiscal year 2019, employer contributions were approximately \$43.9 million; member contributions were approximately \$17.0 million; and investments gained a net of approximately \$126.2 million. For fiscal year 2018, employer contributions were approximately \$48.8 million; member contributions were approximately \$14.2 million; and investments lost a net of approximately \$42.1 million.

Management Discussion and Analysis

Employer and member contributions combined decreased by \$1.5 million in fiscal year 2020 compared to \$2.1 million in fiscal year 2019. These fluctuations in the contribution amounts are primarily due to the increase of the employer contribution rate from 16.0% of covered compensation in fiscal year 2019 to 15.5% in fiscal year 2019, and the decrease from 19.10% of covered compensation in fiscal year 2018 to 16.00% in fiscal year 2019.

The PSRSSTL Actuary determines the amount of employer contributions required to maintain actuarial soundness of the System as part of the annual actuarial valuation report. However, through legislation passed in 2017, beginning with plan year 2018, the employer contribution rate was decreased to 16.0% of covered compensation. This rate will decrease by 0.5% in each future plan year until reaching a minimum of 9.0% and remain at 9.0% of covered compensation in all subsequent plan years.

An active member contribution rate of 5.00% of covered compensation was effective from July 1, 1999 through December 31, 2017. In 2018, through legislation passed in 2017, the active member contribution rate was increased to 5.50% of covered compensation for members hired before January 1, 2018. This rate will increase by 0.50% per year until reaching 9.00%. After that, the contribution rate will remain at 9.00% of covered compensation. The legislation requires new active members hired on or after January 1, 2018, to immediately contribute at a rate of 9.00%.

Net investment income was \$69.4 million, \$126.2 million and \$(42.0) million in fiscal years 2020, 2019 and 2018, respectively. These fluctuations in net investment income occurred because the investment earning rates were 8.9%, 16.8% and (5.0)% in fiscal years 2020, 2019 and 2018, respectively. Net investment income or (loss) reflects gross investment income or (loss) less investment expenses, such as investment manager, investment advisor and custodial fees.

Management Discussion and Analysis

EXPENSES – DEDUCTIONS FROM FIDUCIARY NET POSITION

The primary deductions from fiduciary net position were payments of retirement benefits, survivor benefits, disability benefits, retiree healthcare subsidies and refunds to members who have retired or terminated employment. PSRSSTL operating expenses in fiscal year 2020 were approximately .20% of assets, while operating expenses were approximately 0.21% and 0.24% of assets for 2019 and 2018, respectively.

Condensed Statements of Changes in Fiduciary Net Position

	<u>FY 2020</u>	<u>FY 2019</u>	<u>FY 2018</u>	<u>FY 2020</u> <u>% Change</u>	<u>FY 2019</u> <u>% Change</u>
Additions					
Employer contributions	\$ 41,822,334	\$ 43,902,706	\$ 48,797,779	(4.7)%	(10.0)%
Member contributions	17,607,279	17,019,685	14,248,567	3.5 %	19.4 %
Net investment income (loss)	69,466,228	126,231,937	(42,116,945)	45.0 %	(399.7)%
Rental income	164,877	161,263	157,219	2.2 %	2.6 %
Other income	7,264,633	1,238,033	288,646	486.8 %	328.9 %
Total Additions	<u>136,325,351</u>	<u>188,553,624</u>	<u>21,375,266</u>	(27.7)%	782.1 %
Deductions					
Retirement benefits	99,692,129	99,624,865	99,641,973	0.1 %	- %
Survivor benefits	3,007,912	3,043,126	3,082,696	(1.2)%	(1.3)%
Disability benefits	3,412,356	3,575,042	3,616,435	(4.6)%	(1.1)%
Health care subsidies	2,129,938	2,249,449	2,381,857	(5.3)%	(5.6)%
Operating expenses	1,906,813	1,862,658	1,996,981	2.4 %	(6.7)%
Refunds to members	4,438,938	4,608,688	5,287,691	(3.7)%	(12.8)%
Total Deductions	<u>114,588,086</u>	<u>114,963,828</u>	<u>116,007,633</u>	(0.3)%	(0.9)%
Change in Fiduciary Net Position	<u>\$ 21,737,265</u>	<u>\$ 73,589,796</u>	<u>\$ (94,632,367)</u>	(70.5)%	(177.8)%

FINANCIAL SUMMARY

For over 24 years, the PSRSSTL Investment Consultant has consistently calculated the System's investment performance; thereby, providing a valid basis on which performance can be compared with other public pension funds. For instance, the System's investments have provided consistent returns with cumulative PSRSSTL investment performance ranking in the top 40% of similar public pension plans for the last 24 years through the period ended December 31, 2020.

The fiduciary net position over this same timeframe has fluctuated from a low of \$780 million in fiscal year 1997 to a high of \$1.15 billion in fiscal year 2007. At the end of fiscal year 2020, the fiduciary net position was \$914.7 million. These fluctuations in the value of the System's fiduciary net position can be attributed to volatile financial market conditions, particularly due to the pandemic in the current year and other volatile market changes in other years, that caused substantial losses of investment returns in several fiscal years followed by large investment gains in other fiscal years.

Management Discussion and Analysis

Until fiscal year 2017, using the Governmental Accounting Standards Board ("GASB") calculation method implemented in 1992, the funded status of PSRSSTL remained stable by fluctuating within the range of 80.5% to 88.6% for 26 fiscal years. The funded ratio of a plan compares its assets to its liabilities; thereby, on an actuarial basis, measuring a plan's ability to fulfill future financial obligations to its members. The funded ratios of the PSRSSTL for fiscal years 2020, 2019 and 2018 were 78.6, 78.5%, and 78.1%, respectively. The dip in the System's funded ratio beginning with fiscal year 2017 was primarily due to the change in the System's actuarial assumed rate of return (discount rate) from 8.0% to 7.5%.

The Board of Trustees and the PSRSSTL Actuary assume that the PSRSSTL will continue to be funded on a sound actuarial basis provided required member and employer contributions are made as recommended, a prudent and well-diversified Asset Allocation Policy remains in place, quality investment managers continue to be selected, and the financial markets dodge sustained volatility. However, during fiscal year 2017, the Missouri General Assembly, in cooperation with then Governor Eric Greitens, enacted changes to the System's calculations for the required annual employer and member contributions that jeopardize the System's actuarial soundness. Unless this legislation is overturned or replaced, these changes will have adverse effects on the System and its ability to meet future financial obligations to its members. It is assumed that the Board of Trustees will fulfill its fiduciary duty to the System's membership by continuing to take the appropriate legal action against the legislation.

The first quarter of 2020 was an extremely volatile time in the financial markets, indicating that returns would not be positive for the year. However, despite the continuing pandemic and domestic turmoil throughout the year, the markets recovered from early losses and the plan posted very positive returns for the 2020 fiscal year.

REQUESTS FOR INFORMATION

This report is intended to provide the Board of Trustees, PSRSSTL members, and other interested parties a general overview of PSRSSTL financial matters. If any reader has questions about this report or needs additional financial information, contact the Public School Retirement System of the City of St. Louis.

Financial Statements**Public School Retirement System of the City of St. Louis
Statements of Fiduciary Net Position
December 31, 2020 and 2019**

	Assets	
	<u>2020</u>	<u>2019</u>
Cash	<u>\$ 9,863,612</u>	<u>\$ 9,803,323</u>
Receivables		
Accrued interest and dividends	582,304	806,651
Other receivables	<u>240,694</u>	<u>20,978</u>
Total Receivables	<u>822,998</u>	<u>827,629</u>
Investments, at fair value		
Cash equivalents	45,645,690	50,133,288
Bonds		
U.S. Government and agency issues	30,541,590	32,071,483
Corporate	28,625,293	31,181,568
Foreign investments (bonds and stocks)	91,225,646	86,066,721
Common and preferred stocks	209,538,964	201,795,327
Mutual and co-mingled funds	389,396,506	380,889,694
Real estate partnerships	46,928,887	48,419,609
Limited partnerships	<u>62,928,944</u>	<u>52,066,573</u>
Total Investments	904,831,520	882,624,263
Property and Building, net	<u>1,571,742</u>	<u>1,623,368</u>
Total Assets	<u>917,089,872</u>	<u>894,878,583</u>

Deferred Outflows of Resources

Deferred Outflows of Resources Related to Pensions	<u>480,318</u>	<u>742,621</u>
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Liabilities

Accounts Payable and Accrued Expenses	867,927	728,909
Net Pension Liability	<u>1,051,687</u>	<u>1,621,273</u>
Total Liabilities	<u>1,919,614</u>	<u>2,350,182</u>

Deferred Inflows of Resources

Deferred Inflows of Resources Related to Pensions	<u>873,622</u>	<u>231,333</u>
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Net Position

Net Position Restricted for Pensions	<u>\$ 914,776,954</u>	<u>\$893,039,689</u>
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Financial Statements**Public School Retirement System of the City of St. Louis
Statements of Changes in Fiduciary Net Position
Years Ended December 31, 2020 and 2019**

	<u>2020</u>	<u>2019</u>
Additions		
Employer contributions		
St. Louis Public Schools	\$ 29,884,664	\$ 31,344,663
Sick leave conversion	117,129	192,404
Charter Schools	11,746,232	12,267,081
Retirement System	74,309	98,558
Plan member contributions		
St. Louis Public Schools	11,795,498	12,306,381
Charter Schools	5,775,829	4,682,712
Retirement System	<u>35,952</u>	<u>30,592</u>
	<u>59,429,613</u>	<u>60,922,391</u>
Investment income		
Cash equivalents	232,644	643,528
Bonds		
U.S. Government and agency issues	1,928,940	2,783,981
Corporate	585,817	2,768,870
Foreign investments (bonds and stocks)	4,865,413	17,214,207
Common and preferred stock	26,452,859	55,029,943
Mutual and co-mingled funds	36,852,766	48,125,629
Limited partnerships	3,570,434	3,566,441
Real estate partnerships	<u>(1,083,252)</u>	<u>356,012</u>
	73,405,621	130,488,611
Less investment expenses	<u>3,939,393</u>	<u>4,256,674</u>
Net investment income	69,466,228	126,231,937
Rental income	164,877	161,263
Other miscellaneous income	<u>7,264,633</u>	<u>1,238,033</u>
Net Additions	<u>136,325,351</u>	<u>188,553,624</u>
Deductions		
Benefits paid		
Retirement benefits	99,692,129	99,624,865
Survivor benefits	3,007,912	3,043,126
Disability benefits	3,412,356	3,575,042
Health care subsidies	<u>2,129,938</u>	<u>2,249,449</u>
	108,242,335	108,492,482
Operating expenses	1,906,813	1,862,658
Contribution refunds due to death or resignation	<u>4,438,938</u>	<u>4,608,688</u>
Total Deductions	<u>114,588,086</u>	<u>114,963,828</u>
Net Increase in Net Position	21,737,265	73,589,796
Net Position Restricted for Pensions, Beginning of Year	<u>893,039,689</u>	<u>819,449,893</u>
Net Position Restricted for Pensions, End of Year	<u>\$ 914,776,954</u>	<u>\$ 893,039,689</u>

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 School District, and of all employees of the System. The System issues a Comprehensive Annual Financial Report ("Annual Report"), a publicly available financial report that can be obtained at www.psrstl.org.

An eleven member Board of Trustees is responsible for general administration of the System and investing the System's assets. Trustees are appointed by plan members and the Board of Education of the City of St. Louis.

Membership and Eligibility

All persons employed on a full-time basis are members of the System as a condition of employment. Membership statistics, as of the latest actuarial valuations, are as follows:

	January 1, 2020	January 1, 2019
Active members	5,108	5,050
Inactive members	3,274	2,886
Total members not retired	8,382	7,936
Retired members		
Service and survivors	4,237	4,255
Disability	240	245
	4,477	4,500
Total membership	12,859	12,436

Vesting

Full vesting on termination of employment after at least five years of service is provided if contributions remain with the System. The full benefit is payable at age 65 or at a reduced early retirement benefit prior to age 65.

Funding Policy

The funding objective of the System is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percentage of covered payroll.

Benefits

Upon retirement at age 65, or at any age if age plus years of credited service equals or exceeds 80 (Rule of 80), or 85 (Rule of 85) if terminated prior to August 28, 2017, members receive monthly payments for life or yearly benefits equal to years of credited service multiplied by 2% of average final compensation or 1.75% of average final compensation if hired on or after January 1, 2018, but not to exceed 60% of average final compensation. Early retirement can occur prior at age 60 with five years of service or at the age the Rule of 80 or Rule of 85 is satisfied. 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 (Rule of 85 if terminated prior to August 28, 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 participant, 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 beneficiaries of members who die after at least 18 months of active membership.

The System pays a portion of health insurance premiums for retirees under Section 169.476 of the Statutes, as an expense of the System.

Benefits are recorded when paid.

Return of Contributions Upon Death

If, after the death of a participant, no further monthly amounts are payable to a beneficiary under an optional form of payment or under the survivor benefit provisions, the participant's beneficiary shall be paid the excess, if any, of the participant's accumulated contributions over all payments made to, or on behalf of, the deceased participant.

Contributions by Participants

Active participants hired before January 1, 2018 contributed 6.50% and 6.00% of covered compensation for the years ended December 31, 2020 and 2019, respectively. 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 participants hired on or after January 1, 2018 contribute 9.00% of covered compensation.

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

The System's statutory required contribution rate applied to St. Louis Public Schools and the Retirement System was 15.50% and 16.00% of annual payroll for the years ended December 31, 2020 and 2019, respectively. For all other employers, the System's contractually required contribution rate was set at 15.00% and 15.50% of covered payroll for the years ended December 31, 2020 and 2019, respectively. These contribution rates shall be decreased by 0.50% in each subsequent year until reaching 9.00% of covered payroll. After this, the contribution rate will remain at 9.00% of covered payroll.

Contributions to the pension plan for System employees were \$74,309 and \$98,558 for the years ended December 31, 2020 and 2019, respectively.

Expenses

Operating expenses are paid out of investment income.

Investment Policy

The System's policy in regards to the allocation of invested assets is established and may be amended by the System's Board of Trustees. Investments are managed on a total return basis with a long-term objective of maintaining a fully funded status for the benefits provided through the pension plan. The following was the System's adopted asset allocation policy as of February 25, 2019:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-term Expected Real Rate of Return</u>
U.S. Equity	22.0 %	5.6 %
Non-U.S. Equity	22.0 %	7.2 %
Global Equity	5.0 %	6.1 %
Fixed Income	24.0 %	1.5 %
Real Estate	7.0 %	5.3 %
Private Markets	10.0 %	8.9 %
Hedge Funds	5.0 %	3.3 %
Global Asset Allocation	5.0 %	3.1 %
Total/Average	<u>100.0 %</u>	<u>5.1 %</u>

2. Summary of Significant Accounting Policies

Basis of Presentation and Accounting

The financial statements 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 financial statements are prepared using the accrual basis of accounting.

Use of Estimates

The preparation of financial statements 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.

Receivables

Receivables consist of pending interest and dividends payable on investments held at the end of the year. Other receivables are amounts due to the System from a member and a family member of a deceased member for overpaid benefits.

Investment Valuation and Income Recognition

Investments are reported at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. See Note 5 for discussion of fair value measurements. Short-term investments are reported at cost, which approximates fair value. Securities traded on national or international exchanges are valued at the latest reported sales price at current exchange rates.

Limited Partnerships

Fair values of the limited partnership investments are based on valuations of the underlying companies of the limited partnerships as reported by the general partner. Certain limited partnerships reflect values on a quarter lag basis due to the nature of those investments and the time it takes to value them.

Alternative Investments

For alternative investments where no readily ascertainable fair value exists, management, in consultation with their investment advisors, values these investments in good faith based upon audited financial statements, cash flow analysis, purchase and sales of similar investments, other practices used within the industry, or other information provided by the underlying investment advisors. The estimated fair value of these investments may differ significantly from values that would have been used had a ready market existed.

Investment Income

Investment income includes: realized gains (losses), unrealized appreciation (depreciation), dividends, interest, and other investment income. Purchases and sales of securities are recorded on a trade-date basis. Interest income is recorded on the accrual basis. Dividends are recorded on the ex-dividend date.

Investment Expenses

Investment expenses consist of investment manager, investment advisor, limited partnership, and custodial bank fees.

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.

Furniture and Equipment

Acquisitions of furniture and equipment are charged to operating expense when purchased. The value of furniture and equipment owned by the System is deemed to be immaterial in relation to the total assets of the System.

Property and Building

The System records property, building, and related improvements at cost while expenditures for normal repairs and maintenance, which do not extend the useful life of the assets, are charged to operations as incurred. The System uses the straight-line method for the depreciation of the building and improvements over the estimated life of 40 years.

Long-Lived Asset Impairment

The System evaluates the recoverability of the carrying value of long-lived assets whenever events or circumstances indicate the carrying amount may not be recoverable. If a long-lived asset is tested for recoverability and the undiscounted estimated future cash flows expected to result from the use and eventual disposition of the asset are less than the carrying amount of the asset, the asset cost is adjusted to fair value and an impairment loss is recognized as the amount by which the carrying amount of a long-lived asset exceeds its fair value. The System does not believe any impairment exists as of December 31, 2020 and 2019.

Deferred Outflows and Inflows of Resources

In addition to assets and liabilities, the statements of fiduciary net position will sometimes include separate sections for deferred outflows and inflows of resources. These separate financial statement elements represent the use or acquisition of net position that applies to a future period or periods and will not be recognized as an outflow or inflow of resources until then. The System has deferred outflows and inflows in the statements of fiduciary net position that relate to pension related deferrals required by GASB Statement No. 68.

Pensions

Pension-related expenses, liabilities, deferred outflows of resources, and deferred inflows of resources have been determined on the same basis as they are reported by the System. For this purpose, benefit payments are recognized when due and payable in accordance with the benefit terms.

Recent Accounting Pronouncements

The following GASB Statements are effective for various reporting periods beginning after December 15, 2020.

- GASB Statement No. 87: *Leases*
- GASB Statement No. 91: *Conduit Debt Obligations*
- GASB Statement No. 92: *Omnibus 2020*
- GASB Statement No. 93: *Replacement of Interbank Offered Rates*
- GASB Statement No. 94: *Public-Private and Public-Public Partnerships and Availability Payment Arrangements*
- GASB Statement No. 96: *Subscription-Based Information Technology Arrangements*
- GASB Statement No. 97: *Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans - an amendment of GASB Statements No. 14 and No. 84, and a superseding of GASB Statement No. 32.*

Based on preliminary analysis, the System does not expect the new guidance to have a significant impact on its financial statements.

3. Adoption of New Accounting Standards

During the year ended December 31, 2020, the System adopted GASB Statement No. 90: *Majority Equity Interests*. The primary objective of the Statement is to improve the consistency and comparability of reporting a government's majority equity interest in a legally separate organization and to improve the relevance of financial statement information for certain component units. It defines a majority equity interest and specifies that a majority equity interest in a legally separate organization should be reported as an investment if a government's holding of the equity interest meets the definition of an investment. A majority equity interest that meets the definition of an investment should be measured using the equity method, unless it is held by a special- purpose government engaged only in fiduciary activities, a fiduciary fund, or an endowment (including permanent and term endowments) or permanent fund. Those governments and funds should measure the majority equity interest at fair value. The implementation of GASB Statement No. 90 did not significantly impact the System's financial statements.

During the year ended December 31, 2020, the System adopted GASB Statement No. 95: *Postponement of the Effective Dates of Certain Authoritative Guidance*. The primary objective of this Statement is to provide temporary relief to governments and other stakeholders in light of the COVID-19 pandemic. That objective is accomplished by postponing the effective dates of certain provisions in Statements and Implementation Guides that first became effective or are scheduled to become effective for periods beginning after June 15, 2018, and later. The implementation of GASB Statement No. 95 did not significantly impact the System's financial statements.

4. Investments

At December 31, 2020 and 2019, investments consisted of the following:

	2020	
	<u>Fair Value</u>	<u>Cost</u>
Cash equivalents	\$ 45,645,690	\$ 45,645,690
Bonds		
U.S. Government and agency issues	30,541,590	30,392,441
Corporate	28,625,293	29,647,263
Foreign investments (bonds and stocks)	91,225,646	76,121,495
Common and preferred stocks	209,538,964	149,191,094
Mutual and co-mingled funds	389,396,506	268,518,468
Real estate partnerships	46,928,887	26,228,234
Limited partnerships	62,928,944	62,406,444
	<u>\$ 904,831,520</u>	<u>\$ 688,151,129</u>

	2019	
	<u>Fair Value</u>	<u>Cost</u>
Cash equivalents	\$ 50,133,288	\$ 50,133,288
Bonds		
U.S. Government and agency issues	32,071,483	31,866,509
Corporate	31,181,568	31,302,211
Foreign investments (bonds and stocks)	86,066,721	78,685,343
Common and preferred stocks	201,795,327	151,824,846
Mutual and co-mingled funds	380,889,694	283,264,849
Real estate partnerships	48,419,609	30,625,054
Limited partnerships	<u>52,066,573</u>	<u>50,954,260</u>
	<u>\$ 882,624,263</u>	<u>\$ 708,656,360</u>

5. Fair Value Measurements

The framework for measuring fair value establishes a fair value hierarchy which prioritizes the inputs to valuation techniques used to measure fair value into Levels 1, 2, and 3. The hierarchy gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy are described as follows:

Level 1 Inputs to the valuation methodology are unadjusted quoted prices for identical instruments in active markets.

Level 2 Inputs to the valuation methodology include quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in inactive markets, inputs other than quoted prices that are observable for the instrument, or inputs that are derived principally from or corroborated by observable market data by correlation or other means.

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

Investments that are measured at fair value using the net asset value ("NAV") per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

The fair value amounts presented in the tables are intended to permit reconciliation of the fair value hierarchy to the line items presented in the statements of fiduciary net position. The instrument's fair value measurement level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement. Valuation techniques maximize the use of relevant observable inputs and minimize the use of unobservable inputs.

Carrying amounts of certain financial instruments such as cash, receivables, accounts payable, and accrued expenses approximate fair value due to their short maturities or because the terms are similar to market terms. There have been no changes in the methodologies used at December 31, 2020 and 2019.

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

- Level 1 Investments consist of publicly traded common and preferred stocks and mutual funds. These investments are valued using the closing price reported on the active market on which the individual securities are traded.

- Level 2 Investments consist of corporate and foreign bonds and stocks, U.S. government securities and agency issues, and cash equivalent accounts. These securities are valued using pricing models maximizing the use of observable inputs for similar securities. This includes basing value on yields currently available on comparable securities of issuers with similar credit ratings.

- Level 3 Investments consist of real estate partnerships and limited partnerships. Real estate partnerships are valued at fair value as determined by the general partner. Limited partnerships are valued based on valuations of the underlying companies of the limited partnerships as reported by the general partner.

Investments also consist of co-mingled funds. These securities are valued at the NAV based on shares held by the System at year-end. The NAV is used as a practical expedient to estimate fair value.

The preceding methods described may produce a fair value calculation that may not be indicative of net realizable value or reflective of future fair values. Furthermore, although the System believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at the reporting date.

Notes to Financial Statements

The following table presents the fair value measurements of instruments recognized in the accompanying statements of fiduciary net position measured at fair value on a recurring basis and the level within the fair value hierarchy in which the fair value measurements are categorized at December 31, 2020 and 2019:

	2020			
	Total	Fair Value Measurements		Level 3
		Level 1	Level 2	
Cash equivalents	\$ 45,645,690	\$ -	\$ 45,645,690	\$ -
U.S. Government and agency Issues	30,541,590	-	30,541,590	-
Corporate bonds	28,625,293	-	28,625,293	-
Foreign investments	91,225,646	-	91,225,646	-
Common and preferred stocks	209,538,964	209,538,964	-	-
Mutual funds	251,327,162	251,327,162	-	-
Real estate partnerships	46,928,887	-	-	46,928,887
Limited partnerships	62,928,944	-	-	62,928,944
Total assets in fair value hierarchy	766,762,176	<u>\$460,866,126</u>	<u>\$196,038,219</u>	<u>\$109,857,831</u>
Investments measured at NAV	<u>138,069,344</u>			
	<u>\$904,831,520</u>			
	2019			
	Total	Fair Value Measurements		Level 3
		Level 1	Level 2	
Cash equivalents	\$ 50,133,288	\$ -	\$ 50,133,288	\$ -
U.S. Government and agency Issues	32,071,483	-	32,071,483	-
Corporate bonds	31,181,568	-	31,181,568	-
Foreign investments	86,066,721	-	86,066,721	-
Common and preferred stocks	201,795,327	201,795,327	-	-
Mutual funds	230,056,856	230,056,856	-	-
Real estate partnerships	48,419,609	-	-	48,419,609
Limited partnerships	52,066,573	-	-	52,066,573
Total assets in fair value hierarchy	731,791,425	<u>\$431,852,183</u>	<u>\$199,453,060</u>	<u>\$100,486,182</u>
Investment measured at NAV	<u>150,832,838</u>			
	<u>\$882,624,263</u>			

Investments measured at fair value based on NAV per share practical expedient as of December 31, are as follows:

<u>December 31, 2020</u>	<u>Fair Value</u>	<u>Unfunded Commitments</u>	<u>Redemption Frequency</u>	<u>Redemption Notice Period</u>
Co-mingled funds	\$ 138,069,344	N/A	Daily	30 days
<u>December 31, 2019</u>	<u>Fair Value</u>	<u>Unfunded Commitments</u>	<u>Redemption Frequency</u>	<u>Redemption Notice Period</u>
Co-mingled funds	\$ 150,832,838	N/A	Daily	30 days

The following table provides a summary of changes in fair value of the System's Level 3 assets for the years ended December 31, 2020 and 2019, as follows:

	<u>Limited Partnerships</u>	<u>Real Estate Partnerships</u>	<u>Total</u>
December 31, 2018	\$ 42,695,453	\$ 48,471,908	\$ 91,167,361
Realized gains	4,806,768	(38,069)	4,768,699
Unrealized gains	(899,960)	(1,741,262)	(2,641,222)
Purchases, sales, issuances, and settlements (net)	5,819,284	-	5,819,284
Investment income, net	(354,972)	2,135,343	1,780,371
Management fees	-	(408,311)	(408,311)
December 31, 2019	<u>52,066,573</u>	<u>48,419,609</u>	<u>100,486,182</u>
Realized gains (losses)	317,576	41,563	359,139
Unrealized gains (losses)	1,075,926	(2,906,098)	(1,830,172)
Purchases, sales, issuances, and settlements (net)	7,307,044	-	7,307,044
Investment income (loss), net	2,161,825	1,781,284	3,943,109
Management fees	-	(407,471)	(407,471)
December 31, 2020	<u>\$ 62,928,944</u>	<u>\$ 46,928,887</u>	<u>\$ 109,857,831</u>

All assets have been valued using a market approach, except for Level 3 assets. Fair values in Level 2 are calculated using quoted market prices for similar assets in markets that are not active. The following table describes the valuation technique used to calculate fair values for assets in Level 3. Annually, management determines if the current valuation techniques used in the fair value measurements are still appropriate and evaluates and adjusts the unobservable inputs used in the fair value measurements based on third-party information. There were no changes in the valuation techniques during the current year.

<u>December 31, 2020</u>	<u>Fair Value</u>	<u>Valuation Technique</u>	<u>Unobservable Inputs</u>
Limited Partnerships	\$ 62,928,944	Basis in LLC	Undistributed Income
Real Estate Partnerships	\$ 46,928,887	Basis in LLC	Undistributed Income

<u>December 31, 2019</u>	<u>Fair Value</u>	<u>Valuation Technique</u>	<u>Unobservable Inputs</u>
Limited Partnerships	\$ 52,066,573	Basis in LLC	Undistributed Income
Real Estate Partnerships	\$ 48,419,609	Basis in LLC	Undistributed Income

The significant unobservable inputs used in the fair value measurement of the System's investments in limited partnerships are the original cost of the investment in the partnership plus the cumulative net income of the partnership through the end of the most recent fiscal year. Significant increases or decreases in the partnership's cumulative net income as of December 31, 2020 and 2019 could result in a significantly higher or lower fair value measurement.

6. Risks and Uncertainties

Custodial Credit Risk

Financial instruments that potentially subject the System to concentrations of custodial credit and market risk consist principally of cash and investments. The System places its temporary cash investments with major financial institutions. At December 31, 2020 and 2019, the System had approximately \$10,172,000 and \$10,212,000, respectively, in cash on deposit at US Bank. These balances were insured by the Federal Deposit Insurance Corporation (“FDIC”) for \$250,000. The remaining balances are collateralized by US Bank’s assets held jointly in the name of US Bank, N.A. and the System, held by the Federal Home Loan Bank of Cincinnati as Trustee. Regulations require that government entities, in case of bank failure, have collateral to cover losses that could exceed the FDIC limit of \$250,000. The fair value of the collateralized securities at December 31, 2020 and 2019 was \$11,000,000. A significant portion of the System’s investments are held in trust by US Bank of St. Louis, N.A.

On December 30, 2020, and December 30, 2019, the System received \$30,001,793 and \$31,537,067, respectively, from the St. Louis Board of Education for the 2020 and 2019 St. Louis Public Schools’ annual regular pension contribution and sick leave conversion contribution and held it in a cash equivalents account until investment allocations were implemented.

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

Concentration of Credit Risk

At December 31, 2020 and 2019, the System had the following concentrations, defined as investments (other than those issued or guaranteed by the U.S. Government) in any one organization that represent 5% or more of net position held in trust for pension benefits.

Investments	2020	
	Fair Value	Percentage of Total Net Position
UBS Realty Investors, LLC	\$ 46,928,887	5.1%
Causeway	\$ 47,066,559	5.1%
Fidelity Institutional Asset Mgmt	\$ 54,625,376	6.0%
Mellon Capital Management	\$ 49,995,547	5.5%
Loomis Strategic Alpha	\$ 47,254,584	5.2%
Edgar Lomax Company	\$ 65,464,656	7.2%

2019		
Investments	Fair Value	Percentage of Total Net Position
UBS Realty Investors, LLC	\$ 48,419,609	5.4%
Causeway	\$ 47,622,067	5.3%
Fidelity Institutional Asset Mgmt	\$ 47,035,883	5.3%
Mellon Capital Management	\$ 45,109,801	5.1%

Credit Risk of Debt Securities

The System's debt investments as of December 31, 2020 were rated by Moody's Investor Services ("Moody's") and the ratings are presented using the Moody's rating scale. The System's policy to limit credit risk is that the overall average quality of each high-grade domestic fixed income portfolio shall be AA or better and the average quality rating of securities held in a domestic high-yield portfolio shall be B or better. The overall average quality of each global fixed income portfolio shall be A or better. Non-rated issues are allowed as long as the quality is sufficient to maintain the overall average rating noted.

Notes to Financial Statements

As of December 31, 2020, the System held the following fixed income investments with respective Moody's quality ratings or equivalent rating. Obligations of the U.S. Government or obligations explicitly guaranteed by the U.S. Government are not considered to have credit risk. Foreign investments not considered to have credit risk such as stocks and cash equivalents are not included in the following:

Quality Rating	Corporate bonds	Foreign government and corporate obligations	U.S. Government and agency issues	Total
Aaa	\$ 1,126,281	\$ 117,192	\$ 12,544,595	\$ 13,788,068
Aa1	18,929	-	-	18,929
Aa2	163,127	-	-	163,127
Aa3	413,095	-	478,749	891,844
A1	519,926	-	-	519,926
A2	1,568,649	-	-	1,568,649
A3	1,188,872	-	130,764	1,319,636
Baa1	1,890,987	37,797	49,409	1,978,193
Baa2	2,492,504	187,787	-	2,680,291
Baa3	5,475,883	357,843	-	5,833,726
Ba1	866,736	454,276	-	1,321,012
Ba2	504,167	317,542	-	821,709
Ba3	829,237	66,795	-	896,032
B1	465,636	36,625	-	502,261
B2	172,338	65,893	-	238,231
B3	499,503	73,353	-	572,856
Caa1	157,403	-	-	157,403
Caa2	48,559	13,597	-	62,156
Ca	14,320	-	-	14,320
Not rated	10,209,141	2,349,316	17,338,073	29,896,530
Total	<u>\$ 28,625,293</u>	<u>\$ 4,078,016</u>	<u>\$ 30,541,590</u>	<u>\$ 63,244,899</u>

As of December 31, 2019, the System held the following fixed income investments with respective Moody's quality ratings or equivalent rating.

Quality Rating	Corporate bonds	Foreign Government and corporate obligations	U.S. Government and agency issues	Total
Aaa	\$ 2,296,753	\$ -	\$ 12,080,385	\$ 14,377,138
Aa1	168,378	-	-	168,378
Aa2	313,093	24,870	-	337,963
Aa3	401,215	64,925	358,060	824,200
A1	656,502	-	90,485	746,987
A2	1,218,582	76,139	-	1,294,721
A3	1,321,606	-	-	1,321,606
Baa1	1,659,077	35,546	-	1,694,623
Baa2	2,497,025	203,222	-	2,700,247
Baa3	5,300,458	696,906	-	5,997,364
Ba1	1,085,387	425,855	-	1,511,242
Ba2	391,052	339,149	-	730,201
Ba3	665,771	-	-	665,771
B1	348,202	68,160	-	416,362
B2	373,508	34,213	-	407,721
B3	774,118	56,110	-	830,228
Caa1	152,053	32,010	-	184,063
Caa2	128,951	128,212	-	257,163
Not rated	11,429,837	1,231,591	19,542,553	32,203,981
Total	<u>\$ 31,181,568</u>	<u>\$ 3,416,908</u>	<u>\$ 32,071,483</u>	<u>\$ 66,669,959</u>

Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of an investment. The System does not have a formal policy to limit foreign currency risk. The System's exposure to foreign currency risk in U.S. Dollars as of December 31, 2020 is as follows:

Currency	Cash Equivalents	Equities	Total
Australian Dollar	\$ -	\$ 358,803	\$ 358,803
British Pound Sterling	1	12,426,518	12,426,519
Canadian Dollar	344	1,821,242	1,821,586
Danish Krone	-	164,601	164,601
Euro	-	30,644,215	30,644,215
Hong Kong Dollar	-	1,722,172	1,722,172
Japanese Yen	-	7,292,362	7,292,362
Korean Won	-	2,772,088	2,772,088
Mexican Peso	-	292,189	292,189
Swedish Krona	-	526,614	526,614
Swiss Franc	-	<u>8,386,047</u>	<u>8,386,047</u>
	<u>\$ 345</u>	<u>\$ 66,406,851</u>	66,407,196

Foreign investment denominated in U.S. Dollars	<u>24,818,795</u>
	<u>\$ 91,225,991</u>

Notes to Financial Statements

The System's exposure to foreign currency risk in U.S. Dollars as of December 31, 2019 is as follows:

Currency	Cash Equivalents	Equities	Total
Australian Dollar	\$ -	\$ 763,487	\$ 763,487
British Pound Sterling	1	17,715,244	17,715,245
Canadian Dollar	342	3,719,271	3,719,613
Danish Krone	-	235,371	235,371
Euro	-	20,284,166	20,284,166
Hong Kong Dollar	-	2,615,290	2,615,290
Israeli New Sheqel	-	79,998	79,998
Japanese Yen	-	10,028,512	10,028,512
Korean Won	-	2,359,050	2,359,050
Norwegian Krone	-	51,138	51,138
Singapore Dollar	-	62,596	62,596
South African Rand	-	47,173	47,173
Swedish Krona	-	67,516	67,516
Swiss Franc	-	4,932,765	4,932,765
Thai Baht	-	44,724	44,724
	<u>\$ 343</u>	<u>\$ 63,006,301</u>	63,006,644
Foreign investment denominated in U.S. Dollars			<u>23,060,420</u>
			<u>\$86,067,064</u>

Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The System's fixed income investments are managed in accordance with policies established by the Board that are specific as to the degree of interest rate risk that can be taken. The System's policies established by the Board manage the interest rate risk within the portfolio using various methods, including effective duration, option adjusted duration, average maturity, and segmented time distribution, which reflects total fair value of investments maturing during a given time period. The System does not have a specific investment policy on interest rate risk. However, domestic bond managers are limited to seven years average duration and global bond managers cannot differ from the passive benchmark by more than two years as a means of managing its exposure to fair value losses arising from increasing interest rates.

The segmented time distribution of the various investment types of the System's debt securities at December 31, 2020 is as follows:

Type	2020 Fair Value	Less than 1 year	1 to 5 years	6 to 10 years	More than 10 years
Corporate bonds	\$ 28,625,293	\$ 37	\$ 6,470,855	\$ 10,261,399	\$ 11,893,002
Foreign government and corporate obligations	4,078,016	-	1,050,795	2,185,110	842,110
U.S. Government and agency issues	<u>30,541,590</u>	<u>3,461</u>	<u>5,282,730</u>	<u>3,768,892</u>	<u>21,486,509</u>
Total	<u>\$ 63,244,899</u>	<u>\$ 3,498</u>	<u>\$ 12,804,380</u>	<u>\$ 16,215,401</u>	<u>\$ 34,221,621</u>

The segmented time distribution of the various investment types of the System's debt securities at December 31, 2019 is as follows:

Type	2019 Fair Value	Less than 1 year	1 to 5 years	6 to 10 years	More than 10 years
Corporate bonds	\$ 31,181,568	\$ 255,331	\$ 8,787,327	\$ 9,256,456	\$ 12,882,454
Foreign government and corporate obligations	3,416,908	-	1,030,359	1,798,680	587,868
U.S. Government and agency issues	<u>32,071,483</u>	<u>-</u>	<u>4,486,057</u>	<u>1,853,196</u>	<u>25,732,230</u>
Total	<u>\$ 66,669,959</u>	<u>\$ 255,331</u>	<u>\$ 14,303,743</u>	<u>\$ 12,908,332</u>	<u>\$ 39,202,552</u>

7. Property and Building

Property and building as of December 31, consists of:

	<u>2020</u>	<u>2019</u>
Land	\$ 229,451	\$ 229,451
Building	2,065,061	2,065,061
Tenant improvements	<u>158,120</u>	<u>158,120</u>
	2,452,632	2,452,632
Less accumulated depreciation	<u>880,890</u>	<u>829,264</u>
Property and Building, net	<u>\$ 1,571,742</u>	<u>\$ 1,623,368</u>

Depreciation expense totaled \$51,626 and \$56,897 for the years ended December 31, 2020 and 2019, respectively.

8. Occupancy

The System occupies offices in a building it owns. Occupancy expenses for the years ended December 31, 2020 and 2019 were \$39,142 and \$34,857, respectively.

The System leases a portion of its building to an unrelated party. The current lease agreement extends the term to May 2021 with annual rent ranging from \$162,514 to \$166,208. Rental income received for the years ended December 31, 2020 and 2019 totaled \$164,877 and \$161,263, respectively.

9. Tax Status of Plan

The Internal Revenue Service has determined and informed the System by a letter dated December 15, 2016, that the System and related trust and amendments are designed in accordance with the applicable sections of the Internal Revenue Code ("IRC"). Management believes that the System is designed and is currently being operated in compliance with the applicable requirements of the IRC and therefore believes that the System is qualified and the related trust is tax-exempt.

10. Retirement Plan of the System

Pension Liabilities, Pension Expense, Deferred Outflows and Deferred Inflows of Resources Related to Pensions

At December 31, 2020 and 2019, the System reported a liability of \$1,051,687 and \$1,621,273, respectively, as its proportionate share of the net pension liability. The net pension liability was measured as of December 31, 2019 and 2018, respectively, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date.

The System's proportionate share of the net pension liability was based on the System's actual employer's compensation relative to the actual compensation of all participating employers for the System's plan years ended December 31, 2019 and 2018. At December 31, 2019 and 2018, the System's portion was 0.21% and 0.19%, respectively.

Assumption changes effective as of December 31, 2019 was:

Revised blended discount of 4.78 percent to 7.50 percent, net of expenses.

For the year ended December 31, 2020, the System recognized pension expense of \$150,372 consisting of the current year contribution, pension liability adjustment, and amortization of deferred outflows and inflows of resources. At December 31, 2020, the System reported deferred outflows and inflows of resources related to pensions from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Difference between expected and actual experience	\$ -	\$ 25,912
Changes in assumptions	176,050	609,061
Net difference between projected and actual earnings on pension plan investments	146,373	167,888
Changes in proportion and differences between employer contributions and proportionate share of contributions	83,586	70,761
System contributions subsequent to the measurement date of December 31, 2019	<u>74,309</u>	<u>-</u>
Total	<u>\$ 480,318</u>	<u>\$ 873,622</u>

For the year ended December 31, 2019, the System recognized pension expense of \$371,203 consisting of the current year contribution, pension liability adjustment, and amortization of deferred outflows and inflows of resources. At December 31, 2019, the System reported deferred outflows and inflows of resources related to pensions from the following sources:

	<u>Deferred Outflows of Resources</u>	<u>Deferred Inflows of Resources</u>
Difference between expected and actual experience	\$ 3,089	\$ 39,693
Changes in assumptions	397,711	-
Net difference between projected and actual earnings on pension plan investments	215,095	73,304
Changes in proportion and differences between employer contributions and proportionate share of contributions	28,168	118,336
System contributions subsequent to the measurement date of December 31, 2018	<u>98,558</u>	<u>-</u>
Total	<u>\$ 742,621</u>	<u>\$ 231,333</u>

The System's total pension liability in the December 31, 2019 and 2018 actuarial valuation was determined using the actuarial assumptions disclosed in Note 12.

Deferred outflows of resources of \$74,309 resulting from the System's contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended December 31, 2021. Other 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:

<u>Year</u>	<u>Amount</u>
2021	\$ (54,501)
2022	(239,580)
2023	(148,146)
2024	<u>(25,386)</u>
Total	<u>\$ (467,613)</u>

Discount Rate

The discount rate used to measure the total pension liability was 7.50 percent for each of the years ended December 31, 2020 and 2019. The projection of cash flows used to determine the discount rate assumed that System contributions will continue to follow the funding policy established prior to the year ended December 31, 2020. Based on those assumptions, the System's contributions will continue to follow the current funding policy.

Sensitivity of the System's proportionate share of the net pension liability to changes in the discount rate

The following presents the System's proportionate share of the net pension liability calculated using the discount rate of 7.50 and 4.78 percent for the years ended December 31, 2020 and 2019, respectively, as well as what the System's proportionate share of the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the current rate:

System's proportionate share of the net pension liability for the year ended December 31, 2020	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
	\$ 1,052,633	\$ 1,051,687	\$ 574,085
System's proportionate share of the net pension liability for the year ended December 31, 2019	1% Decrease (3.78%)	Current Discount Rate (4.78%)	1% Increase (5.78%)
	\$ 1,973,164	\$ 1,621,273	\$ 1,279,017

11. Annual Money-Weighted Rate of Return

The annual money-weighted rate of return was 8.90 percent and 16.83 percent for the years ended December 31, 2020 and 2019, respectively. The annual money-weighted rate of return expresses investment performance, net of investment expense, and adjusted for the changing amounts actually invested.

12. Employers' Net Pension Liability

The components of the net pension liability (the retirement system's liability determined in accordance with GASB Statement No. 67 less the fiduciary net position) as of December 31, 2020, are shown in the *Schedule of Net Pension Liability* below.

Actuarial valuation of an ongoing plan involves estimates of the reported amounts and assumptions about the probability of occurrence of events far into the future. Examples include assumptions about future employment mortality and future salary increases. Amounts determined regarding the net pension liability are subject to continual revision as actual results are compared with past expectations and new estimates are made about the future. The last experience study was performed in 2016. The net pension liability as of December 31, 2020 and 2019 is \$363,687,113 and \$378,254,353, respectively, based on actuarial valuations. The 2020 valuation was performed as of June 2020, with a measurement date of January 1, 2020, rolled forward and updated to December 31, 2020 using generally accepted actuarial procedures. The 2019 valuation was performed as of June 2019, with a measurement date of January 1, 2019, rolled forward and updated to December 31, 2019 using generally accepted actuarial procedures.

Schedule of Net Pension Liability

The components of the net pension liability of all participating employers at December 31, 2020 and 2019, are as follows:

	<u>2020</u>	<u>2019</u>
Total pension liability	\$ 1,278,464,067	\$ 1,271,294,339
Less: Fiduciary net position	<u>914,776,954</u>	<u>893,039,986</u>
Employers' net pension liability	<u>\$ 363,687,113</u>	<u>\$ 378,254,353</u>
Plan net position as a percentage of total pension liability	71.55 %	70.25 %

Sensitivity of Net Pension Eligibility to Changes in the Discount Rate

The following presents the net pension liability at December 31, 2020, calculated using the discount rate of 7.50 percent, as well as what the net pension liability would have been if it were calculated using a discount rate that is 1-percentage point lower or 1- percentage-point higher than the current rate:

	<u>1% Decrease (6.50%)</u>	<u>Current Discount Rate (7.50%)</u>	<u>1% Increase (8.50%)</u>
Net pension liability - 2020	\$ 486,608,990	\$ 363,687,113	\$ 259,414,662

The following presents the net pension liability at December 31, 2019, calculated using the discount rate of 7.50 percent, as well as what the net pension liability would have been if it were calculated using a discount rate that is 1-percentage point lower or 1- percentage-point higher than the current rate:

	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
Net pension liability - 2019	\$ 501,254,030	\$ 378,254,353	\$ 273,373,890

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 contributions will continue to follow the current funding policy. See page 49.

Under GASB Statement No. 68, employers participating in the plan would recognize a proportionate share of total pension expense of \$7,188,133 and \$71,428,049 for their fiscal years beginning after June 15, 2020 and 2019, respectively.

Required schedules of changes of employer net pension liability for the years ended December 31, 2020 and 2019, are provided on page 36.

A schedule of projected fiduciary net position is provided on page 50.

The System selected the assumptions used for the accounting results on page 36. Management believes that these assumptions are reasonable and comply with the requirements of GASB Statement No. 67 as applicable.

13. Subsequent Events

The System has evaluated subsequent events through April 19, 2021, the date the financial statements were available to be issued.

Required Supplementary Information

**Public School Retirement System of the City of St. Louis
Schedules of Changes of Employer Net Pension
Liability For The Years Ended December 31,**

	2020	2019	2018	2017	2016	2015	2014
Total pension liability	\$ 23,374,806	\$ 40,762,465	\$ 41,332,913	\$ 19,950,269	\$ 19,260,511	\$ 19,136,245	\$ 18,728,870
Service cost	92,951,028	78,546,085	79,257,906	92,276,865	92,358,115	93,242,628	93,305,719
Interest	-	-	-	18,979,978	-	-	-
Changes of benefit terms	-	-	-	(8,215,370)	6,392,416	(10,065,347)	-
Difference between expected and actual experience	3,525,167	(631,432)	(21,350,805)	397,218,720	70,532,232	-	-
Changes of assumptions	-	(392,633,162)	(113,101,170)	(112,950,471)	(113,608,409)	(113,384,329)	(113,082,656)
Benefit payments	(112,681,273)	(113,101,170)	(114,010,652)	407,259,991	74,934,865	(11,070,803)	(1,048,067)
Net change in total pension liability	7,169,728	(387,057,214)	(14,770,638)	407,259,991	74,934,865	(11,070,803)	(1,048,067)
Total pension liability - beginning	1,271,294,339	1,658,351,553	1,673,122,191	1,265,862,200	1,190,927,335	1,201,998,138	1,203,046,205
Total pension liability - ending	\$ 1,278,464,067	\$ 1,271,294,339	\$ 1,658,351,553	\$ 1,673,122,191	\$ 1,265,862,200	\$ 1,190,927,335	\$ 1,201,998,138
Plan fiduciary net position							
Employer contributions	\$ 41,822,334	\$ 43,902,706	\$ 48,797,779	\$ 41,077,344	\$ 39,519,979	\$ 40,708,503	\$ 41,757,458
Employee contributions	17,607,279	17,019,685	14,248,567	12,591,552	12,652,029	11,664,711	11,887,933
Net investment income	76,895,738	127,614,501	(41,671,079)	124,796,919	44,492,088	(5,342,651)	35,000,792
Benefit payments including refunds of employee contributions	(112,681,273)	(113,101,170)	(114,010,652)	(112,950,471)	(113,608,409)	(113,384,329)	(113,082,656)
Administrative expense	(1,906,813)	(1,590,013)	(1,996,982)	(1,613,506)	(1,554,314)	(1,466,261)	(1,350,393)
Other	(255,913)	-	-	-	-	(431,423)	-
Net change in plan fiduciary net position	21,481,352	73,845,709	(94,632,367)	63,901,838	(18,498,627)	(68,251,450)	(25,786,866)
Plan fiduciary net position - beginning	893,295,602	819,449,893	914,082,260	850,180,422	868,679,049	936,930,499	962,717,365
Plan fiduciary net position - ending	\$ 914,776,954	\$ 893,295,602	\$ 819,449,893	\$ 914,082,260	\$ 850,180,422	\$ 868,679,049	\$ 936,930,499
Net pension liability - ending	\$ 363,687,113	\$ 377,998,737	\$ 838,901,660	\$ 759,039,931	\$ 415,681,778	\$ 322,248,286	\$ 265,067,639
Total pension liability	\$ 1,278,464,067	\$ 1,271,294,339	\$ 1,658,351,553	\$ 1,673,122,191	\$ 1,265,862,200	\$ 1,190,927,335	\$ 1,201,998,138
Less: Plan fiduciary net position	914,776,954	893,295,602	819,449,893	914,082,260	850,180,422	868,679,049	936,930,499
Employer net pension liability	\$ 363,687,113	\$ 377,998,737	\$ 838,901,660	\$ 759,039,931	\$ 415,681,778	\$ 322,248,286	\$ 265,067,639
Plan fiduciary net position as a percentage of the total pension liability	71.55 %	70.27 %	49.41 %	54.63 %	67.16 %	72.94 %	77.95 %
Covered payroll	\$ 272,973,377	\$ 263,772,380	\$ 265,773,659	\$ 260,223,066	\$ 252,127,288	\$ 245,699,583	\$ 243,280,015
Employer net pension liability as a percentage of covered payroll	133 %	143 %	316 %	292 %	165 %	131 %	109 %

*Schedule is intended to show information for 10 years. Additional years will be displayed as they become available. The blended rate was changed from 4.78 percent to 7.50 percent at December 31, 2019.

See independent auditors' report

Required Supplementary Information

**Public School Retirement System of the City of St. Louis
Schedules of the System's Proportionate Share of the Net Pension Liability
For The Years Ended December 31,**

	2020	2019	2018	2017	2016	2015	2014
System's proportion of the net pension liability	0.21 %	0.19 %	0.23 %	0.21 %	0.20 %	0.22 %	0.22 %
System's proportionate share of the net pension liability	\$ 1,051,687	\$ 1,621,273	\$ 1,727,361	\$ 876,434	\$ 649,399	\$ 570,232	\$ 517,013
System's covered payroll	\$ 509,484	\$ 453,896	\$ 535,096	\$ 478,280	\$ 454,115	\$ 472,849	not available
System's proportionate share of the net pension liability as a percentage of its covered payroll	206.40 %	357.19 %	322.81 %	183.25 %	143.00 %	120.59 %	not available
Plan fiduciary net position as a percentage of the total pension liability	70.25 %	49.41 %	54.63 %	67.16 %	72.94 %	77.95 %	72.30 %

* The amounts presented for each fiscal year were determined as of December 31 of the previous year. The goal is to provide a full 10-year history as the information becomes available.

See independent auditors' report

Required Supplementary Information

**Public School Retirement System of the City of St. Louis
Schedules of Annual Money-Weighted Rate of Return on Investments
For The Years Ended December 31,**

The System began tracking the annual money-weighted rate of return during the fiscal year ended December 31, 2014. The annual money-weighted rate of return for future years will appear in the following schedule as they occur. The goal is to provide a full 10-year history as the information becomes available.

<u>Year Ended December 31,</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Annual money-weighted rate of return, net of investment expense, adjusted for the changing amounts actually invested	<u>8.90 %</u>	<u>16.83 %</u>	<u>(5.09)%</u>	<u>15.55 %</u>	<u>5.52 %</u>	<u>(1.00)%</u>	<u>3.93 %</u>

See independent auditors' report

Required Supplementary Information

Public School Retirement System of the City of St. Louis Schedules of Employer Contributions December 31, 2020

Board of Education

Year Ended December 31,	Actuarially Determined Contribution	Contributions Recognized by the Plan	Contributions Deficiency (Excess)	Covered Payroll	Contributions Recognized by the Plan as a Percentage of Covered Payroll
2011	\$19,933,761	\$19,933,761	-	\$198,775,945	10.03 %
2012	20,786,075	20,786,075	-	175,009,885	11.88 %
2013	27,962,472	27,962,472	-	185,606,968	15.07 %
2014	31,555,696	31,555,696	-	191,273,081	16.50 %
2015	31,072,850	31,072,850	-	195,853,519	15.87 %
2016	29,007,501	29,007,501	-	191,534,175	15.14 %
2017	30,459,434	30,459,434	-	193,647,262	15.73 %
2018	37,376,323	37,376,323	-	195,723,057	19.10 %
2019	34,715,003	31,344,663	\$ 3,370,340 *	195,904,143	16.00 %
2020	36,133,150	29,884,664	6,248,486 *	192,817,182	15.50 %

*The Board of Education paid the statutory required contribution that was recognized by the System for the year ended December 31, 2020 and 2019.

The actuarial determined contribution is determined from the prior year census; therefore the contributions are recognized one year in arrears.

Retirement System

Year Ended December 31,	Actuarially Determined Contribution	Contributions Recognized by the Plan	Contribution s Deficiency (Excess)	Covered Payroll	Contributions Recognized by the Plan as a Percentage of Covered Payroll
2011	\$ 57,964	\$ 57,964	-	\$ 578,006	10.03 %
2012	73,902	73,902	-	622,220	11.88 %
2013	91,361	91,361	-	606,427	15.07 %
2014	85,590	85,590	-	518,799	16.50 %
2015	83,960	83,960	-	529,203	15.87 %
2016	79,497	79,497	-	524,915	15.14 %
2017	74,644	74,644	-	474,551	15.73 %
2018	100,565	100,565	-	526,616	19.10 %
2019	98,558	98,558	-	556,184	17.72 %
2020	75,452	74,309	\$ 1,143	402,634	18.46 %

The actuarial determined contribution is determined from the prior year census; therefore the contributions are recognized one year in arrears.

See independent auditors' report

**Public School Retirement System of the City of St. Louis
Schedules of Employer Contributions
December 31, 2020**

Charter Schools

Year Ended December 31,	Actuarially Determined Contribution	Contributions Recognized by the Plan	Contributions Deficiency (Excess)*	Covered Payroll	Contributions Recognized by the Plan as a Percentage of Covered Payroll
2011	\$ 4,272,457	\$ 4,521,680	\$ (249,223) *	\$42,604,182	10.61 %
2012	5,068,681	5,533,481	(464,800) *	42,676,134	12.97 %
2013	7,313,765	6,765,907	547,858 *	48,546,696	13.94 %
2014	5,625,992	8,527,507	(2,901,515) *	34,101,634	25.01 %
2015	7,440,420	8,445,676	(1,005,256) *	46,897,293	18.01 %
2016	8,123,754	9,718,163	(1,594,409) *	53,640,493	18.12 %
2017	9,123,878	10,130,296	(1,006,418) *	58,005,475	17.46 %
2018	12,216,701	11,018,669	1,198,032 *	63,973,393	17.22 %
2019	12,282,602	12,267,081	15,521 *	69,313,332	17.70 %
2020	13,221,261	11,746,232	1,475,029 *	70,552,564	16.65 %

*Charter Schools report and pay employer contributions in the current year as service is credited.

The actuarial determined contribution is determined from the prior year census; therefore the contributions are recognized one year in arrears.

See independent auditors' report

**Public School Retirement System of the City of St. Louis
Schedules of Employer Contributions
December 31, 2020**

Employer Contributions

<u>Year Ended December 31,</u>	<u>Annual Required Contribution</u>	<u>Percent Contributed</u>
2011	\$ 24,264,182	118.4 %
2012	25,928,658	114.0
2013	35,367,598	104.7
2014	37,267,278	109.2
2015	38,597,230	102.4
2016	37,210,752	110.4
2017	39,657,956	123.0
2018	49,693,589	88.3
2019	42,523,785	98.4
2020	40,946,007	*

* To be determined at the end of the year

The information presented in the required supplemental schedules was determined as part of the actuarial valuation prepared by Buck Global, LLC.

See independent auditors' report

Public School Retirement System of the City of St. Louis
Schedules of Employer Contributions
December 31, 2020

Additional information related to the actuarial valuation on the previous page follows:

Actuarial cost method:	Frozen entry age
Rate of investment return:	7.5%, which includes a 2.75% allowance for inflation, net of expenses for 2020 and 2019
Participant account interest crediting rate:	5.00% for 2020 and 2019
Turnover or withdrawal rates:	Various by age and year of membership based on actual experience
Mortality and death rates:	Mortality tables issued by the SOA, the RP-2014 Combined Healthy Table (rolled back to 2006), projected fully generationally using projection scale MP-2015 for the 2020 and 2019 plan years. The mortality assumption for inactive participants receiving benefits is increased by an additional 10% to account for the higher mortality experienced by the Plan for the 2020 and 2019 plan years.
Disability rates:	RP-2014 Disabled Mortality Table (rolled back to 2006) projected fully generationally using projection scale MP-2015 for the 2020 and 2019 plan years.
Rates of retirement between the ages of 55 and 70:	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 5 years of employment and 3.5% thereafter for the 2020 and 2019 plan years.
Asset valuation method:	The assumed yield method of valuing assets

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

There were no method or assumption changes made since the prior valuation.

See independent auditors' report

Required Supplementary Information

Public School Retirement System of the City of St. Louis
Schedule of Funding Progress
(in millions)
December 31, 2020

Actuarial Valuation Date January 1,	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Frozen Entry Age (b)	Unfunded AAL (UAAL) (b - a)
2011	\$ 944.4	\$ 1,066.3	\$ 121.9
2012	925.4	1,090.3	164.9
2013	914.5	1,085.1	170.6
2014	922.9	1,093.4	170.5
2015	926.9	1,093.6	166.7
2016	915.4	1,077.7	162.3
2017	901.1	1,133.6	232.5
2018	899.8	1,152.7	252.9
2019	886.2	1,129.2	243.0
2020	888.8	1,130.6	241.8

Actuarial Valuation Date January 1,	Funded Ratio (a/b)	Annual Covered Payroll (c)	UAAL as a % of Covered Payroll (b-a)/c)
2011	88.6 %	\$ 218.3	55.8 %
2012	84.9	234.8	70.2
2013	84.3	225.9	75.5
2014	84.4	243.3	70.1
2015	84.8	245.7	67.8
2016	84.9	252.1	64.4
2017	79.5	260.2	89.3
2018	78.1	265.8	95.2
2019	78.5	263.8	92.1
2020	78.6	273.0	89.0

See independent auditors' report

**Public School Retirement System of the City of St. Louis
Schedules of Operating Expenses
Years Ended December 31, 2020 and 2019**

	<u>2020</u>	<u>2019</u>
Actuarial services	\$ 113,300	\$ 134,575
Accounting and auditing fees	84,377	85,821
Computer programming and consulting	97,164	88,741
Conventions, conferences, seminars		
Trustees (see below)	-	24,683
Depreciation expense	51,626	56,897
Dues and subscriptions	400	6,198
Employee benefits	-	130
Health insurance consulting	39,843	39,843
Insurance - group health	77,271	71,281
Insurance - casualty and bonding	97,328	100,355
Legal fees and expenses	125,741	136,381
Medical fees	500	500
Miscellaneous expense	308,276	(3,705)
Occupancy expense	39,142	34,857
Office repairs and maintenance	45,012	55,128
Office supplies and expenses	10,834	18,387
Payroll taxes	37,898	33,879
Pension expense	150,372	371,203
Postage	56,608	72,074
Printing and publishing	32,775	34,393
Salaries - administrative and clerical	495,394	453,634
Telephone	13,672	16,074
Utilities	<u>29,280</u>	<u>31,329</u>
 Total Operating Expenses	 <u>\$ 1,906,813</u>	 <u>\$ 1,862,658</u>

Trustees' Expenses

The Trustees attended conferences and business meetings in connection with business of the System. The Trustees received no salaries but were allowed expenses relating to their attendance at such events as follows:

	<u>2020</u>	<u>2019</u>
Lodging, meals, and miscellaneous	\$ -	\$ 11,922
Transportation and registration	-	12,761
 Total Trustees Expenses	 <u>\$ -</u>	 <u>\$ 24,683</u>

See independent auditors' report

**Public School Retirement System of the City of St. Louis
Summary of Investment Expenses
Years Ended December 31, 2020 and 2019**

	<u>2020</u>	<u>2019</u>
Investment management fees	\$ 3,728,770	\$ 4,051,945
Consultant fees	177,215	179,888
Limited partnership initial interest	0	0
Banking services	<u>33,408</u>	<u>24,841</u>
Total investment expenses	<u>\$ 3,939,393</u>	<u>\$ 4,256,674</u>

**Public School Retirement System of the City of St. Louis
Schedules of Professional/Consultant Fees
Years Ended December 31, 2020 and 2019**

	<u>2020</u>	<u>2019</u>
Actuarial services	\$ 113,300	\$ 134,575
Accounting and auditing fees	84,377	85,821
Building property management	39,142	34,857
Health insurance consulting	39,843	39,843
Legal expenses	125,741	136,381
Technology consulting	<u>97,164</u>	<u>88,741</u>
Total Fees	<u>499,567</u>	<u>\$ 520,218</u>

See independent auditors' report

Other Supplementary Information

Public School Retirement System of the City of St. Louis
Schedules of Limited Partnerships
Years Ended December 31, 2020 and 2019

Partnership Name	Style	Investments at Fair Value as of December 31, 2020
BIG Real Estate Fund I, L.P.	Private Equity & Private Debt	\$ 4,959,682
Brightwood Capital Fund IV, L.P.	Private Equity & Private Debt	10,162,948
ElmTree U.S. Net Lease Fund III, L.P.	Private Equity & Private Debt	4,256
Fort Washington Private Equity Investors IX, L.P.	Private Equity & Private Debt	11,139,753
Landmark Equity Partners XIV, L.P.	Private Equity & Private Debt	700,472
Landmark Equity Partners XV, L.P.	Private Equity & Private Debt	3,908,372
Landmark Equity Partners XVI, L.P.	Private Equity & Private Debt	7,072,233
MC Credit Partner, L.P.	Private Equity & Private Debt	1,872,380
Mesirow Financial Private Equity Partnership Fund III, L.P.	Private Equity & Private Debt	711,111
Monroe Capital Private Credit Fund II L.P.	Private Equity & Private Debt	7,681,731
Monroe Capital Private Credit Fund III L.P.	Private Equity & Private Debt	9,353,787
Pantheon Global Secondary Fund III B, L.P.	Private Equity & Private Debt	280,373
Vista Foundation Fund II, L.P.	Private Equity & Private Debt	5,081,846
		<u>\$ 62,928,944</u>

Partnership Name	Style	Investments at Fair Value as of December 31, 2019
BIG Real Estate Fund I, L.P.	Private Equity & Private Debt	\$ 3,428,863
Brightwood Capital Fund IV, L.P.	Private Equity & Private Debt	9,686,290
ElmTree U.S. Net Lease Fund III, L.P.	Private Equity & Private Debt	133,850
Fort Washington Private Equity Investors IX, L.P.	Private Equity & Private Debt	7,183,229
Landmark Equity Partners XIV, L.P.	Private Equity & Private Debt	802,469
Landmark Equity Partners XV, L.P.	Private Equity & Private Debt	3,941,428
Landmark Equity Partners XVI, L.P.	Private Equity & Private Debt	4,151,057
MC Credit Partner, L.P.	Private Equity & Private Debt	115,985
Mesirow Financial Private Equity Partnership Fund III, L.P.	Private Equity & Private Debt	709,735
Monroe Capital Private Credit Fund II L.P.	Private Equity & Private Debt	7,839,969
Monroe Capital Private Credit Fund III L.P.	Private Equity & Private Debt	7,798,536
Pantheon Global Secondary Fund III B, L.P.	Private Equity & Private Debt	822,421
SW Pelham Fund III, L.P.	Private Equity & Private Debt	96,988
Vista Foundation Fund II, L.P.	Private Equity & Private Debt	5,355,753
		<u>\$ 52,066,573</u>

See independent auditors' report

Other Supplementary Information

**Public School Retirement System of the City of St. Louis
Schedules of Annual Required Contribution
December 31, 2020 and 2019**

As determined by the actuary, the annual required contribution is as follows at January 1, 2020:

	<u>Board of Education</u>	<u>Retirement System</u>	<u>Charter Schools</u>	<u>Total</u>
Normal Cost contribution	\$ 16,467,879	\$ 42,945	\$ 6,655,744	\$ 23,166,568
Actuarial accrued liability contribution	<u>18,806,274</u>	<u>49,043</u>	<u>7,600,841</u>	<u>26,456,158</u>
Annual required contribution (ARC)	<u>\$ 35,274,153</u>	<u>\$ 91,988</u>	<u>\$ 14,256,585</u>	<u>\$49,622,726</u>
Covered payroll	\$ 194,042,234	\$ 506,024	\$ 78,425,119	\$ 272,973,377
ARC as % of covered payroll	18.18 %	18.18 %	18.18 %	18.18 %
Statutory required contribution rate	15.00 %	15.00 %	15.00 %	15.00 %
Statutory annual required contribution (ARC)	\$ 29,106,335	\$ 75,904	\$ 11,763,768	\$ 40,946,007

The actuarial and statutory determined contribution is determined from the prior year census for the Board of Education and Retirement System; therefore the contributions are recognized one year in arrears.

As determined by the actuary, the annual required contribution is as follows at January 1, 2019:

	<u>Board of Education</u>	<u>Retirement System</u>	<u>Charter Schools</u>	<u>Total</u>
Normal Cost contribution	\$ 17,304,137	\$ 36,134	\$ 6,331,652	\$ 23,671,923
Actuarial accrued liability contribution	<u>18,829,013</u>	<u>39,318</u>	<u>6,889,609</u>	<u>25,757,940</u>
Annual required contribution (ARC)	<u>\$ 36,133,150</u>	<u>\$ 75,452</u>	<u>\$ 13,221,261</u>	<u>\$ 49,429,863</u>
Covered payroll	\$ 192,817,182	\$ 402,634	\$ 70,552,564	\$ 263,772,380
ARC as % of covered payroll	18.74 %	18.74 %	18.74 %	18.74 %
Statutory required contribution rate	15.50 %	15.50 %	15.50 %	15.50 %
Statutory annual required contribution (ARC)	\$ 29,886,663	\$ 62,408	\$ 10,935,647	\$ 40,884,719

The actuarial and statutory determined contribution is determined from the prior year census for the Board of Education and Retirement System; therefore the contributions are recognized one year in arrears.

See independent auditors' report

Other Supplementary Information

**Public School Retirement System of the City of St. Louis
Schedule of Actuarial Present Values of Projected Benefit
Payments 000's omitted
December 31, 2020**

Fiscal Year Ending 12/31	Beginning Fiduciary Net Position	Benefit Payments			Present Value of Benefit Payments			Using a Single Discount Rate of 7.50%
		Benefit Payments	Funded Portion	Unfunded Portion	Funded Portion at 7.50%	Unfunded Portion at 1.93%		
2021	\$ 914,777	\$ 110,983	\$ 110,983	\$ -	\$ 107,041	\$ -	\$ 107,041	
2022	\$ 929,078	\$ 110,130	\$ 110,130	\$ -	\$ 98,808	\$ -	\$ 98,808	
2023	\$ 942,983	\$ 109,012	\$ 109,012	\$ -	\$ 90,981	\$ -	\$ 90,981	
2024	\$ 957,260	\$ 107,413	\$ 107,413	\$ -	\$ 83,393	\$ -	\$ 83,393	
2025	\$ 972,934	\$ 106,629	\$ 106,629	\$ -	\$ 77,008	\$ -	\$ 77,008	
2026	\$ 989,493	\$ 106,149	\$ 106,149	\$ -	\$ 71,313	\$ -	\$ 71,313	
2027	\$ 1,006,152	\$ 105,741	\$ 105,741	\$ -	\$ 66,093	\$ -	\$ 66,093	
2028	\$ 1,022,847	\$ 105,262	\$ 105,262	\$ -	\$ 61,194	\$ -	\$ 61,194	
2029	\$ 1,039,680	\$ 104,789	\$ 104,789	\$ -	\$ 56,669	\$ -	\$ 56,669	
2030	\$ 1,056,692	\$ 104,321	\$ 104,321	\$ -	\$ 52,480	\$ -	\$ 52,480	
2031	\$ 1,073,914	\$ 103,804	\$ 103,804	\$ -	\$ 48,576	\$ -	\$ 48,576	
2032	\$ 1,091,389	\$ 103,433	\$ 103,433	\$ -	\$ 45,026	\$ -	\$ 45,026	
2033	\$ 1,108,970	\$ 103,014	\$ 103,014	\$ -	\$ 41,715	\$ -	\$ 41,715	
2034	\$ 1,126,686	\$ 102,510	\$ 102,510	\$ -	\$ 38,615	\$ -	\$ 38,615	
2035	\$ 1,146,333	\$ 101,946	\$ 101,946	\$ -	\$ 35,723	\$ -	\$ 35,723	
2036	\$ 1,168,164	\$ 101,342	\$ 101,342	\$ -	\$ 33,034	\$ -	\$ 33,034	
2037	\$ 1,192,448	\$ 100,710	\$ 100,710	\$ -	\$ 30,538	\$ -	\$ 30,538	
2038	\$ 1,219,459	\$ 100,120	\$ 100,120	\$ -	\$ 28,241	\$ -	\$ 28,241	
2039	\$ 1,249,395	\$ 99,511	\$ 99,511	\$ -	\$ 26,110	\$ -	\$ 26,110	
2040	\$ 1,282,540	\$ 99,047	\$ 99,047	\$ -	\$ 24,176	\$ -	\$ 24,176	
2041	\$ 1,319,000	\$ 98,516	\$ 98,516	\$ -	\$ 22,368	\$ -	\$ 22,368	
2042	\$ 1,359,163	\$ 98,038	\$ 98,038	\$ -	\$ 20,707	\$ -	\$ 20,707	
2043	\$ 1,403,295	\$ 97,491	\$ 97,491	\$ -	\$ 19,155	\$ -	\$ 19,155	
2044	\$ 1,451,823	\$ 96,835	\$ 96,835	\$ -	\$ 17,698	\$ -	\$ 17,698	
2045	\$ 1,505,265	\$ 96,218	\$ 96,218	\$ -	\$ 16,359	\$ -	\$ 16,359	
2046	\$ 1,564,012	\$ 95,400	\$ 95,400	\$ -	\$ 15,088	\$ -	\$ 15,088	
2047	\$ 1,628,762	\$ 94,572	\$ 94,572	\$ -	\$ 13,914	\$ -	\$ 13,914	
2048	\$ 1,700,036	\$ 93,494	\$ 93,494	\$ -	\$ 12,795	\$ -	\$ 12,795	
2049	\$ 1,778,673	\$ 92,434	\$ 92,434	\$ -	\$ 11,768	\$ -	\$ 11,768	
2050	\$ 1,865,273	\$ 91,208	\$ 91,208	\$ -	\$ 10,801	\$ -	\$ 10,801	
2051	\$ 1,960,691	\$ 89,724	\$ 89,724	\$ -	\$ 9,884	\$ -	\$ 9,884	
2052	\$ 2,065,928	\$ 87,898	\$ 87,898	\$ -	\$ 9,008	\$ -	\$ 9,008	
2053	\$ 2,182,137	\$ 85,940	\$ 85,940	\$ -	\$ 8,193	\$ -	\$ 8,193	
2054	\$ 2,310,345	\$ 83,838	\$ 83,838	\$ -	\$ 7,435	\$ -	\$ 7,435	
2055	\$ 2,451,668	\$ 81,509	\$ 81,509	\$ -	\$ 6,724	\$ -	\$ 6,724	
2056	\$ 2,607,382	\$ 79,052	\$ 79,052	\$ -	\$ 6,066	\$ -	\$ 6,066	
2057	\$ 2,778,765	\$ 76,448	\$ 76,448	\$ -	\$ 5,457	\$ -	\$ 5,457	
2058	\$ 2,967,184	\$ 73,655	\$ 73,655	\$ -	\$ 4,891	\$ -	\$ 4,891	
2059	\$ 3,174,178	\$ 70,845	\$ 70,845	\$ -	\$ 4,376	\$ -	\$ 4,376	
2060	\$ 3,401,204	\$ 68,013	\$ 68,013	\$ -	\$ 3,908	\$ -	\$ 3,908	
2061	\$ 3,649,847	\$ 65,183	\$ 65,183	\$ -	\$ 3,484	\$ -	\$ 3,484	
2062	\$ 3,921,773	\$ 62,353	\$ 62,353	\$ -	\$ 3,100	\$ -	\$ 3,100	
2063	\$ 4,218,777	\$ 59,529	\$ 59,529	\$ -	\$ 2,753	\$ -	\$ 2,753	
2064	\$ 4,542,787	\$ 56,712	\$ 56,712	\$ -	\$ 2,440	\$ -	\$ 2,440	
2065	\$ 4,895,873	\$ 53,911	\$ 53,911	\$ -	\$ 2,158	\$ -	\$ 2,158	
2066	\$ 5,280,254	\$ 51,128	\$ 51,128	\$ -	\$ 1,904	\$ -	\$ 1,904	

See independent auditors' report

Public School Retirement System of the City of St. Louis
Schedule of Projection of Fiduciary Net Position
000's omitted
December 31, 2020

Year	Projected Beginning Fiduciary Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Investment Earnings	Projected Ending Fiduciary Net Position
2021	\$ 914,777	\$ 58,638	\$ 110,983	\$ 66,645	\$ 929,078
2022	\$ 929,078	\$ 56,371	\$ 110,130	\$ 67,665	\$ 942,983
2023	\$ 942,983	\$ 54,605	\$ 109,012	\$ 68,683	\$ 957,260
2024	\$ 957,260	\$ 53,321	\$ 107,413	\$ 69,766	\$ 972,934
2025	\$ 972,934	\$ 52,257	\$ 106,629	\$ 70,931	\$ 989,493
2026	\$ 989,493	\$ 50,676	\$ 106,149	\$ 72,132	\$ 1,006,152
2027	\$ 1,006,152	\$ 49,099	\$ 105,741	\$ 73,337	\$ 1,022,847
2028	\$ 1,022,847	\$ 47,546	\$ 105,262	\$ 74,549	\$ 1,039,680
2029	\$ 1,039,680	\$ 46,029	\$ 104,789	\$ 75,772	\$ 1,056,692
2030	\$ 1,056,692	\$ 44,534	\$ 104,321	\$ 77,010	\$ 1,073,914
2031	\$ 1,073,914	\$ 43,015	\$ 103,804	\$ 78,264	\$ 1,091,389
2032	\$ 1,091,389	\$ 41,483	\$ 103,433	\$ 79,531	\$ 1,108,970
2033	\$ 1,108,970	\$ 39,922	\$ 103,014	\$ 80,807	\$ 1,126,686
2034	\$ 1,126,686	\$ 40,000	\$ 102,510	\$ 82,157	\$ 1,146,333
2035	\$ 1,146,333	\$ 40,120	\$ 101,946	\$ 83,657	\$ 1,168,164
2036	\$ 1,168,164	\$ 40,303	\$ 101,342	\$ 85,323	\$ 1,192,448
2037	\$ 1,192,448	\$ 40,545	\$ 100,710	\$ 87,177	\$ 1,219,459
2038	\$ 1,219,459	\$ 40,820	\$ 100,120	\$ 89,236	\$ 1,249,395
2039	\$ 1,249,395	\$ 41,140	\$ 99,511	\$ 91,516	\$ 1,282,540
2040	\$ 1,282,540	\$ 41,476	\$ 99,047	\$ 94,032	\$ 1,319,000
2041	\$ 1,319,000	\$ 41,878	\$ 98,516	\$ 96,801	\$ 1,359,163
2042	\$ 1,359,163	\$ 42,322	\$ 98,038	\$ 99,848	\$ 1,403,295
2043	\$ 1,403,295	\$ 42,823	\$ 97,491	\$ 103,197	\$ 1,451,823
2044	\$ 1,451,823	\$ 43,395	\$ 96,835	\$ 106,883	\$ 1,505,265
2045	\$ 1,505,265	\$ 44,027	\$ 96,218	\$ 110,938	\$ 1,564,012
2046	\$ 1,564,012	\$ 44,749	\$ 95,400	\$ 115,401	\$ 1,628,762
2047	\$ 1,628,762	\$ 45,527	\$ 94,572	\$ 120,318	\$ 1,700,036
2048	\$ 1,700,036	\$ 46,395	\$ 93,494	\$ 125,736	\$ 1,778,673
2049	\$ 1,778,673	\$ 47,325	\$ 92,434	\$ 131,709	\$ 1,865,273
2050	\$ 1,865,273	\$ 48,338	\$ 91,208	\$ 138,288	\$ 1,960,691
2051	\$ 1,960,691	\$ 49,421	\$ 89,724	\$ 145,540	\$ 2,065,928
2052	\$ 2,065,928	\$ 50,562	\$ 87,898	\$ 153,544	\$ 2,182,137
2053	\$ 2,182,137	\$ 51,770	\$ 85,940	\$ 162,379	\$ 2,310,345
2054	\$ 2,310,345	\$ 53,039	\$ 83,838	\$ 172,121	\$ 2,451,668
2055	\$ 2,451,668	\$ 54,366	\$ 81,509	\$ 182,857	\$ 2,607,382
2056	\$ 2,607,382	\$ 55,755	\$ 79,052	\$ 194,680	\$ 2,778,765
2057	\$ 2,778,765	\$ 57,182	\$ 76,448	\$ 207,685	\$ 2,967,184
2058	\$ 2,967,184	\$ 58,673	\$ 73,655	\$ 221,977	\$ 3,174,178
2059	\$ 3,174,178	\$ 60,206	\$ 70,845	\$ 237,664	\$ 3,401,204
2060	\$ 3,401,204	\$ 61,799	\$ 68,013	\$ 254,857	\$ 3,649,847
2061	\$ 3,649,847	\$ 63,436	\$ 65,183	\$ 273,673	\$ 3,921,773
2062	\$ 3,921,773	\$ 65,120	\$ 62,353	\$ 294,237	\$ 4,218,777
2063	\$ 4,218,777	\$ 66,856	\$ 59,529	\$ 316,683	\$ 4,542,787
2064	\$ 4,542,787	\$ 68,642	\$ 56,712	\$ 341,156	\$ 4,895,873
2065	\$ 4,895,873	\$ 70,480	\$ 53,911	\$ 367,812	\$ 5,280,254
2066	\$ 5,280,254	\$ 72,372	\$ 51,128	\$ 396,816	\$ 5,698,314

See independent auditors' report

“to enhance the well-being and financial security of its members, retirees and beneficiaries..

**PUBLIC SCHOOL RETIREMENT SYSTEM OF THE CITY OF ST. LOUIS
COMPREHENSIVE ANNUAL FINANCIAL REPORT
Fiscal Year 2020**

Investment Section

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KRISTIN FINNEY-COOKE, CAIA
SENIOR CONSULTANT

WILL FORDE, CFA, CAIA
PRINCIPAL

DEANNA I. JONES
SENIOR CONSULTANT SPECIALIST

June 2, 2021

The Board of Trustees
Public School Retirement System of the City of St. Louis
3641 Olive Street, Suite 300
St. Louis, MO 63108

Dear Board Members,

NEPC, LLC currently serves as the pension consultant for the Public School Retirement System of the City of St. Louis. In our role as the pension consultant, we assist the Board in several manners. We guide the overall asset allocation strategy of the Plan; draft the investment policy of the Plan (and amendment of when necessary); conduct investment manager searches (both traditional and alternative asset classes); provide ongoing performance evaluation for each individual investment manager, each asset class composite, and the overall investment portfolio as a whole; and on an ongoing basis we provide pertinent education to the Board.

The overall objective of the Public School Retirement System of the City of St. Louis is to provide service, disability, death and vested retirement benefits, and other postemployment benefits to members and their beneficiaries. To ensure a solid foundation for the future of the System, the Public School Retirement System of the City of St. Louis has implemented an investment program designed to achieve the actuarial assumed rate of return in the long term, while prudently managing the risk of the portfolio.

Although investment manager performance is key to the future “success” of the Plan, the overall asset allocation policy will be the primary determinant of such “success.” Modern portfolio theory maintains that long term investors, who assume prudent levels of risk, will be rewarded with incremental returns above lower returning and risk free assets (i.e. T-Bills). The pension fund, in its asset allocation policy, is required to satisfy the need to pay accumulated/earned retirement benefits today, while at the same time be prepared for “uncertain” future benefits. As such, the asset allocation policy looks to meet this objective. It takes into consideration the diversification of asset classes, but more importantly, the diversification of the risk contribution of each asset class to the investment program which in turn reduces the overall volatility of the portfolio while garnering the highest expected risk adjusted returns.

Return data for the Fund was reconciled from manager provided time-weighted returns that were calculated in accordance with the CFA Institute's Global Investment Performance Standards (GIPS). Valuations, where available, are based on published national securities exchange prices, as provided by PSRS's custodian, US Bank.

255 State Street | Boston, MA 02109 | TEL: 617.374.1300 | www.nepc.com

BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | PORTLAND | SAN FRANCISCO



This letter summarizes the structure and performance of the Public School Retirement System of the City of St. Louis Fund through the Fiscal Year ending December 31, 2020.

Asset Allocation and Investment Performance

During the year ending December 31, 2020, the Fund returned +10.4% gross of fees, which ranked it in the 95th percentile of public funds with assets between \$250 million and \$1.0 billion within the InvestorForce Public Fund Defined Benefit Universe. Assets increased from \$887.12 million at the end of fiscal year 2019 to approximately \$903.22 million as of year-end 2020. Over the trailing 5-year period ending December 31, 2020, the Fund earned an annualized rate of return of 8.5%, ranking in the 97th percentile of the comparative universe. Over the trailing 10-year period ending December 31, 2020, the Fund earned an annualized rate of return of 7.4%, ranking in the 96th percentile.

At the December 31, 2020 fiscal year end, the asset allocation of the Plan was 48.8% equities, 23.5% fixed income, 5.6% global asset allocation strategies, 6.0% hedge funds, 5.8% real estate, 3.2% private equity, 3.0% private debt strategies, and 4.1% cash.

Market Commentary

A new year is a chance for a fresh start...a clean break from the past. And with the year we've just endured, it's no wonder that we want to put as much distance as we possibly can between 2020 and us. But the reality is, no matter how tempted we are to hit that reset button, there is still a pandemic raging. While we are hopefully standing at the beginning of a successful and global inoculation program that cuts short the virus' trajectory, we still have some ways to go. So, until we are closer to containing the outbreak, we must carry on with the handwashing, mask-wearing and social distancing—seemingly simple measures that have so far proven to be the best defense. Similarly, we have investment guidelines—also straightforward but tremendously effective—to prepare portfolios to withstand the uncertainties stemming from the economic fallout of the pandemic. We recommend investors start 2021 with a renewed emphasis on strategic asset allocation and an understanding of their risk tolerance, so as to set their portfolios up to achieve long-term financial success.

Global Equity Markets

Global equities started the fourth quarter slow but then finished the year on a strong note, buoyed by news of successful trials of multiple COVID-19 vaccines. Emerging markets led performance for the second straight quarter, with gains of 19.7%; they were followed by international developed equities that returned 16% while U.S. stocks were up 12.1%. During this period, small-cap equities surged, gaining 31.4%; value stocks, bucking trend, outperformed growth equities, with the Russell 1000 Value up 16.3% compared to the Russell 1000 Growth returning 11.4%.

Equity-linked hedge funds largely kept up with global equities in the fourth quarter, with gains of 14.5%, according to the HFRI Equity Hedge Index, bringing year-to-date returns to 17.4%. Technology and healthcare-focused strategies outperformed in 2020, up 28.3% and 25.9%, respectively. Meanwhile, global private equity fundraising totaled \$218.8 billion for the three months ended December 31, bringing the total for the year to \$611.5 billion, down nearly 15% from 2019, according to Preqin. U.S. buyout deal activity—confirmed and estimated—hit a quarterly high, totaling \$267.8 billion, according to PitchBook data; however, 2020 totals, at \$708.4 billion, came in below levels of the previous two years because of a lackluster second and third quarter. U.S. buyout exit activity totaled \$161.8 billion in the fourth quarter, according to PitchBook, putting the year's haul at \$384.8 billion, up from \$357 billion in 2019. In venture capital, deal activity totaled \$38.8 billion in the fourth quarter and hit a record high of \$156.2 billion in 2020; last year's total venture capital exit value of \$290.1 billion also set a new record.


Global Fixed Income Markets

Credit spreads of investment-grade and high-yield debt tightened in the fourth quarter with some segments of the market reaching pre-pandemic levels; lower-quality investment-grade and high-yield securities saw the most tightening. While new issuance of U.S. corporate credit slowed down in the fourth quarter, 2020 volume surpassed issuance in 2019. Meanwhile, volume of newly issued bank loans fell in 2020 from a year earlier. For 2020, the Bloomberg Barclays U.S. Aggregate Index returned 7.5%, the Bloomberg Barclays U.S. Corporate High Yield Index was up 7.1%, and S&P/LSTA Leveraged Loan Index gained 3.1%. Meanwhile, structured credit- and distress-focused hedge fund strategies returned 11.4% in 2020, according to the HFRI ED: Distressed/Restructuring Index. Emerging markets had a positive quarter with the JPM EMBI Global Diversified Index up 5.8% and the JPM GBI-EM Global Diversified Index increasing 9.6%; both indexes ended last year in the black with the JPM EMBI Global Diversified Index returning 5.3% and the JPM GBI-EM Global Diversified Index up 2.7%.

Real Assets

Real assets experienced a strong fourth quarter, led by gains in the energy sector. With the exception of mining and agriculture, all sectors were in the red in 2020 as COVID-19 tore through the world and shuttered economies. After stabilizing in the third quarter, oil prices (WTI) rallied over 20% to around \$48 a barrel for the three months ended December 31. Natural gas finished flat quarter-over quarter at \$2.54 per MMBtu. While energy-related equities benefitted from this supportive environment for commodity prices, the sector still faces scrutiny. Demand for oil has partially recovered from the lows seen last spring while supply will likely remain below pre-pandemic levels. Meanwhile, in real estate, private core assets were in the black during the second half of 2020, with the NCREIF ODCE Index posting a preliminary gross total return of 1.29% in the fourth quarter. Real estate investment trusts (REITs) were up 9% in the fourth quarter but remain down 6% for the year. Retail and office property types bounced back during the quarter, as investors anticipate a recovery, despite the challenges still facing these sectors. Infrastructure indexes were up more than 8% for the quarter but finished the year in negative territory.

Sincerely,



Kristin Finney Cooke, CAIA
Senior Consultant

INVESTMENT POLICIES AND OPERATING GUIDELINES

Public School Retirement System of the City of St. Louis

Investment Policies

Pursuant to the Rules & Regulations established by the PSRSSTL Board of Trustees, the System's assets are invested according to *Rule XIV. – Investment Policies*. The following is a summary of the System's Investment Goals under Rule XIV., Section 3:

Assets of the System shall be invested in a manner designed to preserve and enhance principal over the long term, both in real and nominal terms. Total return, consistent with prudent investment management, is the primary goal of the System. Total return, as used herein, includes income less expenses plus realized and unrealized gains and losses in the System's assets. The Trustees will establish, in the Investment and Operating Guidelines, both real and nominal long-term target rates of return for the Fund that are projected to provide a high probability of achieving the System's long-term investment objectives within acceptable risk levels. The Trustees shall establish, in the Investment and Operating Guidelines, additional performance expectations for the Fund as a whole and for each asset classification within the Fund. Total Fund risk exposure and risk adjusted returns will be regularly evaluated and compared to such peer group or groups that the Trustees and investment consultant may from time to time select.

Investment and Operating Guidelines

PSRSSTL has issued Investment and Operating Guidelines to steer the System's fiduciaries, including staff, investment consultants, investment professionals and investment managers, in the course of investing and administering the Fund's assets, and to measure the performance of the Fund and its investment managers. The guidelines contain specific directives for the following:

Performance Objectives by Asset Class	Asset Allocation Policy
Operating Guidelines by Asset Class	Liquidity Assumption for Benefit Payments
Standards of Investment Performance	Watch List / Probation Process
Reporting Requirements	Use of Guidelines by Investment Managers

Code of Ethics Policy

The Board of Trustees has adopted a Code of Ethics Policy that prohibits conflicts of interest and requires representatives of the Fund to act with the highest level of ethical responsibility in the performance of their duties. All Trustees, employees, professionals and vendors are required to acknowledge their understanding of the policy on an annual basis.

Investment Policies and Operating Guidelines Review

The Investment Policies and Operating Guidelines may be amended or modified from time to time by the Trustees, in the manner provided in the PSRSSTL Rules and Regulations, upon consideration of the advice and recommendations from the System's retained professionals, including the actuary, accountant, investment managers, investment consultant, and attorney. The Investment Policies and Operating Guidelines are regularly reviewed by the Board of Trustees to ensure their relevance to the current needs of the Fund and to communicate any material changes thereto to the investment managers.

To view or print the PSRSSTL Investment Policies and Guidelines, please visit
<http://www.psrstl.org/about-us/rules-regulations-statutes/>

Investment Summary

Public School Retirement System of the City of St. Louis

Schedule of Investments Year Ended December 31, 2020

Investment Category	% of MV	Fair Value (FV)	Cost	FV Over (Under) Cost
Cash Equivalents	5.04%	\$45,645,690	\$45,645,690	\$0
U.S. Government and Agency Issues	3.38%	30,541,590	30,392,441	149,149
Corporate Bonds	3.16%	28,625,293	29,647,263	(1,021,970)
Foreign Investments (bonds & stocks)	10.08%	91,225,646	76,121,495	15,104,151
Common and Preferred Stocks	23.16%	209,538,964	149,191,094	60,347,870
Mutual and Co-Mingled Funds	43.04%	389,396,506	268,518,468	120,878,038
Real Estate Partnerships	5.19%	46,928,887	26,228,234	20,700,653
Limited Partnerships	6.95%	62,928,944	62,406,444	522,500
Total	100.0%	\$904,831,520	\$688,151,129	\$216,680,391

Fair Value of All Assets Years Ended December 31, 2018 – 2020

Investment Category	December 31, 2018		December 31, 2019		December 31, 2020	
	Fair Value	% of Total	Fair Value	% of Total	Fair Value	% of Total
Cash, Receivables, Cash Equivalents	\$47,418,782	5.77%	\$60,764,240	6.78%	\$56,332,300	6.14%
Property and Building	1,680,266	0.20%	1,623,368	0.18%	\$1,571,742	0.17%
U.S. Government & Agency Issued Bonds	28,998,131	3.53%	32,071,483	3.58%	\$30,541,590	3.33%
Corporate Bonds	32,811,378	3.99%	31,181,568	3.48%	\$28,625,293	3.12%
Foreign Investments (bonds and stocks)	73,501,212	8.94%	86,066,721	9.61%	\$91,225,646	9.94%
Common and Preferred Stocks	185,412,081	22.56%	201,795,327	22.53%	\$209,538,964	22.84%
Mutual and Co-Mingled Funds	360,023,724	43.80%	380,889,694	42.53%	\$389,396,506	42.44%
Real Estate Partnerships	48,471,908	5.90%	48,419,609	5.41%	\$46,928,887	5.11%
Limited Partnerships	42,695,453	5.19%	52,066,573	5.81%	\$62,928,944	6.86%
Other Assets	1,019,600	0.12%	742,621	0.08%	\$480,318	0.05%
Total	\$822,032,535	100.0%	\$895,621,204	100.0%	\$917,570,190	100.0%

Public School Retirement System of the City of St. Louis

For the fiscal year ended December 31, 2020, the PSRSSTL portfolio posted a gain of 10.4%, ranking 95th within the Investor Force Universe (IFU) of Public Funds. For the one-year, three-year and five-year periods ending December 31, 2020, the PSRSSTL portfolio ranked 95th and 97th, returning 7.2% and 8.5%, respectively.

Investment returns for the retirement system's portfolio, stocks, fixed income and other investments for the one-year, three-year and five-year periods ending December 31, 2020 are set forth below.

<u>Investment Category</u>	Annualized Returns for Periods Ended¹		
	<i>December 31, 2020, gross of fees</i>		
	One Year	Three Years	Five Years
PSRS Total Portfolio	10.4%	7.2%	8.5%
Allocation Index ²	11.4%	7.6%	9.2%
PSRS Domestic Equity	15.3%	11.8%	13.6%
Russell 3000	20.9%	14.5%	15.4%
PSRS International Equity	11.1%	4.6%	7.7%
MSCI EAFE	7.8%	4.3%	7.4%
PSRS Emerging Market Equity	14.6%	7.0%	13.3%
MSCI Emerging Markets	18.3%	6.2%	12.8%
PSRS Global Equity	13.6%	9.3%	6.9%
MSCI All Country World	15.9%	10.5%	12.2%
PSRS Global Asset Allocation	8.1%	6.0%	7.6%
60% MSCI World 40% FTSE WGBI	14.3%	8.7%	9.5%
PSRS Fixed Income	8.6%	5.1%	5.9%
Barclays US Aggregate	7.5%	5.3%	4.4%
PSRS Hedge Funds	11.8%	5.0%	4.2%
HFRI FOFs Composite	10.7%	4.8%	4.5%
PSRS Real Estate	-1.6%	3.8%	5.0%
NCREIF	2.0%	5.1%	6.3%

¹The investment returns in the schedule are annualized by calculating the time weighted rates of return for the time periods.

²The Allocation Index is comprised of various equity, fixed income, hedge fund, real estate and Treasury bill indices in proportion to the asset weights within the pension fund.

Asset Allocation & Investment Managers

As of December 31, 2020 (in thousands)

ASSET CLASS Money Manager	RELATIVE TO: Management Style	TOTAL PORTFOLIO						ASSET CLASS	
		FAIR VALUE		TARGET VALUE		VARIANCE		FAIR VALUE	
		Value	%	Value	%	Value	%	Value	%
LARGE CAP GROWTH DOMESTIC EQUITIES		68,581	7.6%	49,677	5.5%	18,904	2.1%		
Intech	Large Cap Growth							30,843	45.0%
TCW Asset Management	Large Cap Growth							37,738	55.0%
LARGE CAP CORE DOMESTIC EQUITIES		5,407	0.6%	18,064	2.0%	(12,657)	-1.4%		
Mellon Stock Index Fund	Large Cap Core							5,407	100.0%
LARGE CAP VALUE DOMESTIC EQUITIES		65,515	7.3%	49,677	5.5%	15,838	1.8%		
The Edgar Lomax Company	Large Cap Value							65,515	100.0%
MID/SMALL/MICRO CAP DOMESTIC EQUITIES		87,935	9.7%	81,290	9.0%	6,645	0.7%		
Westfield Capital Management	Small Cap Growth							33,881	38.5%
Systematic Financial Management	Small Cap Value							30,158	34.3%
Dimensional Fund Advisors (DFA)	Micro Cap							23,896	27.2%
GLOBAL TACTICAL ASSET ALLOCATION		50,354	5.6%	45,161	5.0%	5,193	0.6%		
GMO	Balanced Fund							17,005	33.8%
Mellon Global Alpha	Balanced Fund							16,629	33.0%
PIMCO	Balanced Fund							16,720	33.2%
GLOBAL EQUITIES*		57,632	6.4%	45,161	5.0%	12,471	1.4%		
ARGA	Global Equities							9,691	16.8%
Applied Research	Global Equities							13,835	24.0%
Martin	Global Equities							16,724	29.0%
Foresight	Global Equities							17,382	30.2%
INTERNATIONAL EQUITIES		156,017	17.3%	198,709	22.0%	(42,692)	-4.7%		
Dimensional Fund Advisors (DFA)	Emerging Markets							17,957	11.5%
Invesco (formerly OFI Global Asset Management)	Emerging Markets							36,334	23.3%
Fidelity Institutional Asset Management	International Equities							54,625	35.0%
Causeway	International Equities							47,101	30.2%
CORE DOMESTIC BONDS		66,247	7.3%	72,258	8.0%	(6,011)	-0.7%		
EARNEST Partners	Core Domestic Bonds							12,262	18.5%
Manulife Asset Management	Core Domestic Bonds							40,705	61.4%
Xponance	Core Domestic Bonds							13,280	20.0%
ABSOLUTE RETURN DOMESTIC BONDS		47,255	5.2%	45,161	5.0%	2,094	0.2%		
Loomis Sayles	Unconstrained Fixed Income							47,255	100.0%
TREASURY INFLATION-PROTECTED SECURITIES	TIPS	27,958	3.1%	27,097	3.0%	861	0.1%		
Mellon TIPS Index Fund								27,958	100.0%
EMERGING MARKETS DEBT		30,392	3.4%	27,097	3.0%	3,295	0.4%		
Lazard Asset Management	Emerging Markets							30,392	100.0%
GLOBAL MULTI-SECTOR BONDS		40,740	4.5%	45,161	5.0%	(4,421)	-0.5%		
Neuberger Berman Trust Co.	Global Opportunistic Bonds							40,740	100.0%
HEDGED STRATEGIES		54,481	6.0%	45,161	5.0%	9,320	1.0%		
EnTrustPermal	Fund of Funds							1,584	2.9%
Grosvenor Capital Management	Fund of Funds							33,014	60.6%
Whitebox Advisors	Multi-Strategy Direct							19,883	36.5%
REAL ESTATE		52,054	5.8%	63,225	7.0%	(11,171)	-1.2%		
UBS Trumbull Property & Income Funds	Commercial Real Estate							52,054	100.0%
PRIVATE MARKETS		55,587	6.2%	90,322	10.0%	(34,735)	-3.8%		
Private Equity, Private Debt, Private Real Estate	Limited Partnerships							55,587	100.0%
CASH (Does Not Include Managers' Residual Cash)		37,066	4.1%	0	0.0%	37,066	4.1%		
U.S. Bank (checking & operating accounts)	Cash Accounts							37,066	
TOTAL (000's Omitted)		\$903,221	100.0%	\$903,221	100.0%			\$903,221	

Domestic Equity Investments

Domestic Equity Performance & Characteristics	
2020 Return	15.3%
Weighted Avg. Market Capitalization	\$185.31 Billion
P/E Ratio	24.96
Price/Book Ratio	Price/Book Ratio
Five Year Annualized Return	13.6%

PSRSSTL Ten Largest Domestic Equity Holdings			
<u>Company</u>	<u>% of Holdings</u>	<u>Company</u>	<u>% of Holdings</u>
Amazon	2.0	Microsoft Corp	1.4
Allstate Corp	1.6	Cisco Systems Inc.	1.4
Apple Inc	1.5	First American Government Obligation Fund Class Z	1.3
Exelon	1.4	Pfizer Inc.	1.3
MetLife Inc,	1.4	Capital One Financial Corp.	1.1

Top Ten Contributors to the PSRSSTL Domestic Equity Portfolio Relative to the Russell 3000 Stock Index					
<u>Company</u>	<u>Contribution %</u>	<u>Return%</u>	<u>Company</u>	<u>Contribution %</u>	<u>Return%</u>
Metlife Inc.	0.3	27.8	Align Technology	0.2	63.2
Capital One Financial Corp.	0.3	37.7	First Citizens Bancshares Inc.	0.2	80.3
The Trade Desk	0.3	54.4	Rocket Pharmaceuticals Inc.	0.1	139.9
Allstate Corp.	0.3	17.4	Timken Co.	0.1	43.2
Exelon Corp.	0.3	19.1	Cisco Systems	0.1	14.7

Bottom Ten Contributors to the PSRSSTL Domestic Equity Portfolio Relative to the Russell 3000 Stock Index					
<u>Company</u>	<u>Contribution %</u>	<u>Return%</u>	<u>Company</u>	<u>Contribution %</u>	<u>Return%</u>
Apple	-0.6	14.8	Walt Disney Co.	-0.1	46.0
Tesla Inc.	-0.4	64.5	General Electric Co.	-0.1	73.5
Alphabet Inc	-0.2	19.6	Berkshire Hathaway Inc.	-0.1	8.9
Microsoft Corp	-0.2	6.0	United Health Group Inc.	-0.1	12.9
J.P. Morgan Chase & Co.	-0.2	33.2	Micron Technology Inc.	-0.1	60.1

Domestic Bond Investments

A complete list of portfolio holdings is available for a fee based on preparation time and the cost of materials. The information shown reflects securities held for the fiscal year ended December 31, 2020, excluding pooled or mutual funds.

PSRSSTL Domestic Bond Portfolio Performance & Characteristics	
2020 Return	8.6%
Average Yield to Maturity	2.2%
Average Duration	6.8 Years
Average Quality Rating	A
Five-Year Annualized Return	5.9%

The PSRSSTL Investment & Operating Guidelines require the average duration (interest rate sensitivity) of the PSRSSTL domestic bond portfolio to remain seven years or less. Since the average duration of the PSRSSTL domestic bond portfolio was 6.8 years at the end of fiscal year 2020, the System's domestic bond money managers met this requirement in 2020.

PSRSSTL Domestic Bond Portfolio Quality Ratings	Percentage of PSRSSTL Domestic Bond Portfolio (%)
AAA	2.1
AA	57.8
A	4.7
BBB	21.1
BB and Below	13.6
Not Rated	0.7

The PSRSSTL Board of Trustees requires the overall average quality rating of high-grade fixed income investments to be "AA" or better. Although the System no longer invests in a traditional high-yield fixed income strategy, the average quality rating of securities held in these types of bonds is required to be "B" or better. Since around 99% of the PSRSSTL domestic bond portfolio was rated "BB" or better at the end of fiscal year 2020, the System's domestic bond money managers met the plan's requirements for the year.

A complete list of portfolio holdings is available for a fee based on preparation time and the cost of materials. The information shown reflects securities held for the fiscal year ended December 31, 2020, excluding pooled or mutual funds.

Investment Fees and Expenses

**Public School Retirement System
of the City of St. Louis
Brokerage Commissions Paid
Year Ended December 31, 2020**

Company	Commissions	Company	Commissions	Company	Commissions
Baird & Company	913.37	Hong Kong & Shanghai Bank	1,130.01	Percival Financial Partners	22068.05
Barclays Capital	3,600.87	HSBC	4,011.67	Pershing Securities	1,154.84
Begodeh Jbh. Hamburg	438.22	Instinet	6,082.76	Pictet	256.98
Berenberg Gossler	37.71	ITG	14,645.58	Piper Jaffray	3,906.87
BMO Capital Markets	65.88	J P Morgan	6,094.39	Raymond James	685.68
BNP Paribas Security Services	1,861.91	Jannay Montgomery Scott	10.80	RBC Capital Markets	1,300.42
Bofa Securities, Inc.	648.80	Jeffries & Co.	3,144.81	Redburn Partners	827.57
BTIG LLC	59.95	JMP Securities	79.80	Rosenblatt Securities	2,013.24
Cabrera Capital Markets	269.57	Johnson Rice & Co.	114.49	Sanford C. Bernstein & Co	5,233.79
Canaccord Genuity	38.40	Jones Trading	443.30	Seaport Group Securities	80.98
Cantor Fitzgerald	303.55	Keefe Bruyette & Woods	141.00	SG Securities	354.02
Cap Institutional Services	24,424.98	Keybanc Capital Markets	261.91	Siebert Williams Shank	472.01
Carbegie	189.23	Leerink Partners LLC	430.00	SMBG Securities	804.28
Circhkh1	622.32	Liquidnet Inc.	6,502.99	State Street	5,737.96
Citigroup	5,093.98	Loop Capital Markets	4,399.30	Stephens Inc.	52.80
CJ's Securities	5.55	Luminex Trading & Analytics	438.26	Stifel Nicolaus & Co.	1,154.67
CL King & Associates	2,342.67	Macquarie Securities	2,013.16	Sturdivant & Co., Inc.	3,774.06
CLSA Limited	1,316.53	Merrill Lynch	1,608.70	Telsey Advisory Group	54.66
Cornerstone	89.24	Mischer Financial Group	12,522.00	Truist Securities	774.33
Cowen & Co.	27,050.87	Mizuho Securities USA	576.87	UBS	11,360.24
Credit Suisse Securities	27,478.34	MKM Partners	127.29	Virtu Americas LLC	4,442.26
Daiwa	879.02	Morgan Stanley	4,632.82	Wedbush Morgan Securities	35.60
Davidson & Co.	36.73	Needham & Company	158.61	Wells Fargo Securities LLC	1,167.03
Evercore	1,240.48	North South Capital	11.64	William Blair & Co. LLC	71.46
Exane SA	1,208.62	Numis Securities Inc.	177.70	Winterflood	124.20
Goldman Sachs	618.30	O'Neil Securities Inc.	17.20	Wolfe Research	62.80
Guggenheim Securities	86.22	Oppenheimer & Co.	235.20		
Guzman & Co.	867.30	Penserra Securities	598.73		
				2020 Total Commissions	<u>\$240,370.40</u>

Investment Fees and Expenses

Public School Retirement System of the City of St. Louis

Investment Management Fees and Expenses Years Ended December 31, 2020 and 2019

	2020	2019
Investment management fees		
Ativo Capital Management **	\$ 34,106	\$ 90,280
Arga Investment Management	31,614	90,535
Brown Capital Management	8,627	20,510
Causeway Capital Management	247,746	307,270
Channing Capital Management**	5,923	17,107
Chicago Equity Partners*	37,859	159,787
Earnest Partners	31,378	32,298
Edgar Lomax Company	221,733	174,801
Entrust Capital Diversified Fund LTD	7,853	8,265
Fidelity Institutional Asset Management	248,246	262,075
Intech Investment Management	137,070	134,874
Lazard Asset Management	211,481	224,686
Loomis Sayles & Company, LP	216,647	228,616
Manulife Asset Management	128,020	136,970
Mellon Capital Management	137,996	195,639
NCM Capital	36,851	36,877
OFI Global Asset Management	71,356	227,917
Xponance***	157,546	-
Invesco (formerly OFI)	242,574	
Strategic Global**	37,631	110,339
Systematic Financial Management	236,641	287,991
TCW Asset Management Company	207,100	212,735
UBS Realty Investors LLC	407,471	408,311
US Bank Trust	90,997	125,358
Westfield Capital Management	264,242	271,750
Whitebox Multi-Strategy Fund, L.P.	270,062	286,954
Total Investment Management Fees	3,728,770	4,051,945
NEPC, LLC	177,215	179,888
Banking services	33,408	24,841
Total Investment Expenses	\$ 3,939,393	\$ 4,256,674

*Chicago Equity Partners termed as of 4/30/20

**Ativo Capital, Brown Capital, Channing Capital and Strategic Global termed as of 5/28/20.

***As of 5/29/20 Xponance replaced Progress as Manager of Managers and fees for Arga, Applied Research, Martin, and Foresight are paid to Xponance.

“through benefit programs and services which are soundly financed and...

Actuarial Section

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231 South Bemiston
Suite 400
Clayton, MO 63105

June 2020

Mr. Andrew Clark
Executive Director
PSRS of the City of St. Louis
3641 Olive Street, Suite 300
St. Louis, MO 63108-3601

Re: Actuarial Certification of January 1, 2020 Valuation

Dear Members of the Public School Retirement System of the City of St. Louis Board:

The annual actuarial valuation required for the Public School Retirement System of the City of St. Louis ("System") has been prepared as of January 1, 2020 by Buck. The purposes of the valuation are to:

- (1) determine the required annual contributions from the board of education, the retirement system, and the charter schools; and
- (2) present the valuation results of the System as of January 1, 2020.

This report is submitted in accordance with Section 169.450-16 Revised Statutes of Missouri (R.S. Mo.). The required contribution to the System from the board of education, the retirement system, and the charter schools is computed in accordance with Section 169.490 R.S. Mo. The amount of the required contribution is stated in Section 1.3 of this report. Information with respect to financial disclosures under GASB 67 and 68 may be found in a separate report.

In preparing this valuation, we have employed generally accepted actuarial methods and assumptions, in conjunction with employee data and financial information provided to us by the System, to determine a reasonable and sound value for the System liability. The employee data has not been audited, but it has been reviewed and found to be consistent, both internally and with prior years' data. The validity of the valuation results is dependent upon the accuracy of the data and financial information provided.

In my opinion, the actuarial assumptions used are reasonable, taking into account the experience of the System and reasonable long-term expectations, and represent my best estimate of the anticipated long-term experience under the System. The actuary performs an analysis of System experience periodically and recommends changes if, in the opinion of the actuary, assumption changes are needed to more accurately reflect expected future experience. The Experience Study for the period January 1, 2011 to December 31, 2015 was prepared by Buck and approved by the Board for use beginning with the January 1, 2017 actuarial valuation and will remain in effect for valuation purposes until such time as the Board adopts revised assumptions. The next Experience Study will be based on the period from January 1, 2016 to December 31, 2020 and upon approval by the Board will be the basis of valuations performed from January 1, 2022 through January 1, 2026. A summary of all assumptions and methods is presented in Section 3.8 of this report.

Mr. Andrew Clark
PSRS of the City of St. Louis

June 2020
Page 2

Where presented, references to “funded ratio” and “unfunded accrued liability” typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the plan if the plan were to settle (i.e. purchase annuities) for a portion or all of its liabilities.

Future actuarial measurements and contribution requirements may differ from those determined in the valuation because of:

- (1) differences between actual experience and anticipated experience based on the assumptions;
- (2) changes in actuarial assumptions or methods;
- (3) changes in statutory provisions;
- (4) differences between actuarially required contributions and actual contributions.

Buck prepared this report for use by the Retirement System and its auditors in reviewing the operation of the System, including the determination of contributions to be made to the System. Use of this report by other parties or for any other purpose may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or the inapplicability of the report for that purpose. Because of the risk of misinterpretation of actuarial results, Buck recommends requesting its advance review of any statement, document, or filing to be based on information contained in this report. Buck will accept no liability for any such statement, document or filing made without its prior review.

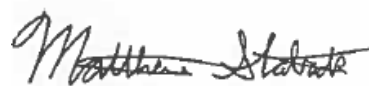
The undersigned meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein, and is available to answer questions regarding this report.

We believe that the assumptions and methods used for funding purposes are individually and in aggregate, reasonable and in combination represent a best estimate of anticipated experience under the plan. We believe that this report conforms with the requirements of the Missouri statutes, and where applicable, other federal and accounting laws, regulations and rules, as well as actuarial principles and practices in accordance with all applicable Actuarial Standards of Practice (ASOPs).

Sincerely,



Troy Jaros, FSA, EA, MAAA, FCA
Director, Retirement Actuary



Matthew Staback, ASA, EA, CERA, MAAA
Consultant, Retirement Actuary

Buck Global, LLC (Buck)

Report Highlights

This report has been prepared by Buck to:

- Present the results of a valuation of the Public School Retirement System of the City of St. Louis (“System”) as of January 1, 2020; and
- Determine the required annual contribution for 2021.

This report is divided into three sections. Section 1 contains the results of the valuation. It includes the experience of the System during the 2019 plan year, the actuarially required costs, and funded levels.

Section 2 contains asset information. It includes market value of assets, the calculation of actuarial value of assets, the contingency reserve, and asset returns.

Section 3 describes the basis of the valuation. It summarizes the System provisions, provides information relating to the System members, and describes the funding methods and actuarial assumptions used in determining liabilities and costs. Also included is historical information about the System.

Experience Gains and Losses

Under the actuarial funding method used to determine the contribution, actuarial gains (or losses) result in a decrease (or increase) in the normal cost rate. Actuarial gains (or losses) result from differences between the actual experience of the System and the expected experience based upon the actuarial assumptions. Annual gains (or losses) should be expected because short-term deviations from expected long-term average experience are common.

For the 2019 plan year, total (net) actuarial losses due to plan experience were \$44.1 million. Approximately \$6.4 million is a loss attributable to the System’s actuarial rate of return on assets which was 6.6%, or 0.9% lower than the assumed rate of return of 7.5% for plan year 2019. By comparison, the rate of return on the market value of assets during plan year 2019 was 16.1%. The difference in these returns is due to the asset smoothing. Market value returns were higher than expected, but these returns are smoothed over 5 years in the actuarial value, rather than realized immediately. As of January 1, 2020, the actuarial value of assets of \$888.8 million is above market value of assets (excluding the expense and contingency reserve) by approximately \$25.7 million.

An actuarial loss of approximately \$37.7 million attributable to demographic experience is included in the above total (net) actuarial loss of \$44.1 million.

Assumption Changes

For the 2020 valuation, no assumptions were changed. A detailed description of the assumptions appears in section 3.8.

Plan Changes

For the 2020 valuation, no plan changes were changed.

Normal cost rate

The normal cost is determined annually and equals the product of the normal cost rate times covered payroll. For plan year 2020, the annual normal cost contribution is \$23,166,568, as compared to \$23,671,923 for plan year 2019. This decrease is primarily due to the legislative changes in future employee contributions, along with the new tier of employees coming into the plan with a 1.75% pension multiplier. The annual normal cost rate decreased from 8.65% to 8.18% due to the legislative changes. Covered payroll increased from \$263.8 million to \$272.9 million.

Accrued liability amortization

The actuarial accrued liability contribution is determined as the amount necessary to amortize the remaining Unfunded Frozen Actuarial Accrued Liability (UFAAL) over a period of 30 years from January 1, 2006, when the Board of Trustees acted to redetermine the UFAAL. This portion of the contribution only changes to reflect changes in benefits, changes in actuarial assumptions and methods, and variations in the remaining UFAAL due to deviations between actual and expected contributions. Employer contributions for 2019 were \$3.2 million lower than the annual required contribution, which increased the UFAAL more than expected. As a result, the net amortization payment increased from \$25,757,940 to \$26,456,158 while the amortization payment component of the contribution rate decreased from 9.8% to 9.7% of covered payroll.

Required contribution and timing

In 2001, the Board of Education agreed to institute a one-year lag for payments of the annual required contributions due from SLPS for future years. Therefore, this actuarial valuation is used to determine the annual required contribution (ARC) payment from SLPS for plan year 2020, due to the Plan no later than December 31, 2021. Due to legislation passed August 28, 2017, the contribution rate is set as a fixed percentage rather than an actuarially determined percentage. Because of the statutory required contribution rate, the dollar amount of the ARC due from SLPS no later than December 31, 2021, decreased to \$29,106,335 for plan year 2020 from \$29,884,664 for plan year 2019.

As a percentage of covered payroll in plan year 2020, the contribution rate for plan year 2020 decreased to 15.00% from 15.50% for plan year 2019. Charter Schools pay both employer and employee contributions as they occur shortly after each payroll period; therefore, this actuarial valuation is used to determine the contribution rate of 15.00% that Charter Schools should be paying beginning with payroll periods ending on or after January 1, 2020.

According to the 2020 Actuarial Valuation Results and timing of payments found in this report, it is important to note that on an actuarially determined and sound basis, SLPS and the Charter Schools should be paying an annual contribution rate of 18.18% versus the 15.00% contribution rate for plan year 2020 as required by statute. The effects on the System's actuarial soundness due to the decreasing statutory required contribution rate schedule will be presented in future annual actuarial valuation reports as they occur.

Summary and Comparison of Principal Valuation Results

Annual Required Contribution

	Board of Education	Retirement System	Charter Schools	Total
2020				
Normal cost contribution	\$ 16,467,879	\$ 42,945	\$ 6,655,744	\$ 23,166,568
Actuarial accrued liability contribution	<u>18,806,274</u>	<u>49,043</u>	<u>7,600,841</u>	<u>26,456,158</u>
Actuarially determined contribution (ADC)	\$ 35,274,153	\$ 91,988	\$ 14,256,585	\$ 49,622,726
Covered payroll	194,042,234	506,024	78,425,119	272,973,377
ADC as % of covered payroll	18.18%	18.18%	18.18%	18.18%
Statutory required contribution rate	15.00%	15.00%	15.00%	15.00%
Statutory annual required contribution (ARC)	\$ 29,106,335	\$ 75,904	\$ 11,763,768	\$ 40,946,007
2019				
Normal cost contribution	\$ 17,304,137	\$ 36,134	\$ 6,331,652	\$ 23,671,923
Actuarial accrued liability contribution	<u>18,829,013</u>	<u>39,318</u>	<u>6,889,609</u>	<u>25,757,940</u>
Actuarially determined contribution (ADC)	\$ 36,133,150	\$ 75,452	\$ 13,221,261	\$ 49,429,863
Covered payroll	192,817,182	402,634	70,552,564	263,772,380
ADC as % of covered payroll	18.74%	18.74%	18.74%	18.74%
Statutory required contribution rate	15.50%	15.50%	15.50%	15.50%
Statutory annual required contribution (ARC)	\$ 29,884,664	\$ 64,408	\$ 10,935,647	\$ 40,884,719

	January 1, 2020	January 1, 2019
System Assets		
Expense and contingency reserve	\$ 30,244,590	\$ 30,776,068
Market value, excluding expense & contingency reserve	863,051,012	788,673,825
Actuarial value	888,759,194	886,156,011
System liabilities		
Unfunded actuarial accrued liability	\$ 241,849,149	\$ 242,999,368
Projected Unit Credit (PUC) Actuarial Accrued Liability	\$1,241,617,244	\$1,238,153,321
Entry Age Normal (EAN) Actuarial Accrued Liability	\$1,274,573,564	\$1,268,885,279
PUC Funding Ratio		
Actuarial value funding ratio	71.6%	71.6%
Market value funding ratio	69.5%	63.7%
EAN Funding Ratio		
Actuarial value funding ratio	69.7%	69.8%
Market value funding ratio	67.7%	62.2%

Analysis of the Valuation

(1) Investment Experience

Our actuarial calculations were based upon the assumption that the System's assets earn 7.50%. The approximate market value rate of return during 2019 was 16.10%. The approximate actuarial value rate of return was 6.56%.

(2) Demographic Experience

The number of active members increased from 5,050 to 5,108 for the period. The average service of active members decreased slightly, the average age increased slightly, and the average annual salary increased by \$1,208 (2.3%). There were small changes in the inactive statistics. The membership statistics are provided in Sections 3.3 through 3.7 of this report.

(3) Salary Increases

The average annual salary increased by 2.3% between January 1, 2019 and January 1, 2020. Total annual covered payroll increased by 3.5% between January 1, 2019 and January 1, 2020.

(4) Changes in Methods from the Prior Valuation

There have been no changes in methods since the prior valuation.

(5) Changes in Assumptions from the Prior Valuation

There have been no changes in assumptions since the prior valuation.

(6) Changes in Benefit Provisions from the Prior Valuation

There have been no changes in assumptions since the prior valuation.

(7) Other Changes

There have been no other changes since the prior valuation.

(8) Summary

The overall effect of experience during the period resulted in no change in the PUC funding ratio utilizing the actuarial value of assets, which remained at 71.6%. The total actuarially determined contribution rate decreased from 18.74% to 18.18% of covered payroll.

Valuation Results

Actuarial Balance Sheet as of January 1, 2020

Actuarial assets

Actuarial value of current assets	\$	888,759,194
Actuarial present value of future participant contributions		147,598,649
Actuarial present value of future employer contributions for:		
Normal costs		145,522,240
Unfunded actuarial accrued liability		<u>241,849,149</u>
Total current and future assets	\$	1,423,729,232

Actuarial liabilities

Actuarial present value of benefits now payable	\$	891,935,875
Actuarial present value of benefits payable in the future:		
Active participants	\$	488,863,627
Terminated vested participants		31,942,590
Terminated non-vested participants		<u>10,987,140</u>
Total payable in the future		<u>531,793,357</u>
Total liabilities for benefits	\$	1,423,729,232
Surplus / (deficit)		0

Projected Unit Credit Funding Ratios

The funding objective of the System is to meet long-term benefit promises through contributions that remain approximately level from year to year as a percentage of covered payroll.

Funding ratios provide a measure of how much progress has been made towards achieving this objective. For this purpose, the System's liabilities are determined using the projected unit credit cost method. Under this method, liabilities are determined for each participant using only service already performed, but anticipating the impact of future salary growth on the benefits attributable to current active participants.

Section 1.6 provides a comparison of this liability measure to the value of assets to produce a snapshot measure of the System's funding ratio.

Another way to check the funding progress of the System is through a prioritized solvency test. Section 1.7 illustrates the history of the System's funding progress under this test.

In a prioritized solvency test, the plan's present assets (cash and investments) are sequentially allocated and compared to three priorities of liabilities as follows:

- Liability 1: Active participant contributions, accumulated with interest;
- Liability 2: The liabilities for future benefits to current inactive participants and beneficiaries; and
- Liability 3: The liabilities for future benefits to current active participants for prior service.

Ideally, progress in funding of these liability groups will normally be exhibited with Liability 1 attaining 100% coverage first, then Liability 2, and finally Liability 3. Note that 100% funding of Liability 3 does not mean that the System has completed its funding of benefits since additional benefits typically are expected to be earned in the future.

Analysis of the Valuation

Projected Unit Credit Funded Status

As of January 1, 2020 the Projected Unit Credit Actuarial Accrued Liability was:

1. Retired members and beneficiaries currently receiving benefits and terminated members not yet receiving benefits	\$ 934,865,605
a. Current active participants	
i. Accumulated member contributions, including interest	130,619,480
ii. Employer-financed benefits	<u>176,132,159</u>
Total Projected Unit Credit Actuarial Accrued Liability	\$ 1,241,617,244

As of January 1, 2020 the Projected Unit Credit AAL was funded as follows:

2. Net assets available for benefits at actuarial value	\$ 888,759,194
3. Unfunded Projected Unit Credit AAL	352,858,050
4. Actuarial value funding ratio, (2) / (1)	71.6%
5. Net assets available for benefits at market value	\$ 863,051,012
6. Unfunded Projected Unit Credit AAL	378,566,232
7. Market value funding ratio, (5) / (1)	69.5%

Analysis of the Valuation

Prioritized Solvency Test

Valuation date January 1	Active participants' accumulated contributions	Retirees, beneficiaries and inactive participants	Active participants (employer-financed)	Valuation assets	Percent covered by valuation assets		
	(1)	(2)	(3)		(1)	(2)	(3)
1999	130,705,014	276,290,128	303,953,494	694,250,672	100%	100%	95%
2000	129,398,364	353,852,977	288,213,016	770,090,498	100%	100%	100%
2001	127,086,325	414,052,293	269,590,438	828,097,298	100%	100%	100%
2002	116,506,785	476,104,516	372,221,726	861,128,076	100%	100%	72%
2003	115,570,837	492,633,382	361,818,972	873,260,102	100%	100%	73%
2004	106,021,476	528,287,121	364,459,284	901,996,455	100%	100%	73%
2005	89,710,662	518,880,414	368,306,240	935,328,638	100%	100%	89%
2006	90,001,111	661,353,685	319,920,373	983,828,243	100%	100%	73%
2007	96,223,413	712,467,372	305,409,824	1,003,428,983	100%	100%	64%
2008	98,112,123	781,006,957	249,244,208	1,014,923,381	100%	100%	54%
2009	104,576,264	801,995,237	187,035,147	963,851,408	100%	100%	31%
2010	110,054,510	805,831,292	195,185,151	950,709,944	100%	100%	18%
2011	103,178,297	842,643,351	169,510,764	944,356,735	100%	100%	0%
2012	116,268,566	850,498,527	189,084,439	925,389,359	100%	95%	0%
2013	120,355,959	849,412,565	190,553,739	914,494,335	100%	93%	0%
2014	114,092,991	896,477,122	164,014,835	922,922,386	100%	90%	0%
2015	116,755,946	892,626,625	156,682,397	926,905,797	100%	91%	0%
2016	120,507,482	887,757,927	157,501,063	915,391,079	100%	90%	0%
2017	122,746,557	933,916,821	166,666,305	901,076,683	100%	83%	0%
2018	122,241,799	935,005,411	178,661,824	899,816,911	100%	83%	0%
2019	126,636,422	932,068,226	179,448,673	886,156,011	100%	81%	0%
2020	130,619,480	934,865,605	176,132,159	888,759,194	100%	81%	0%

Actuarial Value of Assets

This section of the report shows the development of the actuarial value of the assets of the System and provides information regarding the expense and contingency reserve, investment results and the various assets of the System.

The amount of assets used in the actuarial valuation is known as the "actuarial value of assets." The method is discussed in the summary of methods and assumptions, section 3.8. The development of the actuarial value of assets is shown in section 2.1. An important element in the development of the actuarial value of assets is the expense and contingency reserve. The amount of the reserve is determined pursuant to a policy adopted by the Board of Trustees. The history of the reserve is presented in section 2.2.

As shown in section 2.3, the fund had a rate of return of 6.56% on an actuarial value basis, which is 0.94% below the assumed rate of return of 7.50% for plan year 2019. The rate of return on an actuarial value basis is intended to be a more stable rate of return and fluctuate less than rates of return on a market value basis. Thus, the rate of return on an actuarial basis is not always a fair measure of the annual investment performance of the fund. Another indicator of actual performance during the year is the rate of return on a market value basis which was 16.10% for plan year 2019, also presented in section 2.3.

Development of the Actuarial Value of Assets

1. Actuarial value of assets as of January 1, 2019	\$ 886,156,011
2. Participant contributions	17,019,685
3. Employer contributions	43,902,706
4. Benefit payments and expenses	114,691,183
5. Investment increment at 7.50%, $7.50\% \times \{(1) + .5 \times [(2) - (4)]\}$	<u>62,799,020</u>
6. Expected actuarial value on January 1, 2020, (1) + (2) + (3) - (4) + (5)	895,186,239
7. Market value of assets on January 1, 2020	893,295,602
8. Expense and contingency reserve on January 1, 2020, prior to adjustment	30,244,590
9. Adjustment to the investment contingency reserve	<u>0</u>
10. Excess of market value over expected actuarial value, (7) - (6) - (8) - (9)	(32,135,227)
11. Market value adjustment, $20\% \times (10)$	<u>(6,427,045)</u>
12. Actuarial value of assets as of January 1, 2020, (6) + (11)	888,759,194

Retirement System Assets

Expense and Contingency Reserve

An important element in the development of the actuarial value of assets is the expense and contingency reserve. The amount of the reserve is determined pursuant to a policy adopted by the Board of Trustees. Effective January 1, 1996, the Board of Trustees revised Rule X, which governs the determination of the amount of the expense and contingency reserve. The expense portion of the reserve is the sum of:

1. The estimated annual operating expenses for the ensuing year;
2. An amount equal to the liability for non-insurance supplements;
3. An amount equal to the liability for insurance supplements for those participants participating in the program on January 1; and
4. The estimated amount of insurance supplements to be paid for participants expected to retire and participate in the program during the ensuing year.

The investment contingency portion of the reserve is intended to help cover significant shortfalls in the actuarial rate of return. When a shortfall of more than 1% occurs, a portion of the reserve is released equal to one half of the amount of the shortfall up to 2% plus any remaining shortfall. When the rate of return exceeds the assumed rate of return by more than 1%, the reserve is increased subject to a maximum reserve of 5% of the market value of the Retirement Fund. The addition equals one half of the amount of the excess up to 2% plus any remaining excess.

The actuarial return on assets was within 1% of 7.50% during plan year 2020; therefore, no adjustments were made to the actuarial value of assets.

Below is a history of the expense and contingency reserve:

January 1	Expense reserve	Investment contingency reserve	Total expense and contingency reserve
1998	\$30,891,555	\$24,100,041	\$54,991,596
1999	22,142,759	45,972,067	68,114,826
2000	27,992,032	50,003,862	77,995,894
2001	29,837,776	50,003,743	79,841,519
2002	23,527,529	50,003,743	73,531,272
2003	24,952,255	37,759,976	62,712,231
2004	26,028,780	37,759,976	63,788,756
2005	27,170,188	45,115,876	72,286,064
2006	32,534,770	45,115,876	77,650,646
2007	29,864,946	50,732,410	80,597,356
2008	31,987,370	57,234,574	89,221,944
2009	30,555,388	0	30,555,388
2010	29,903,107	0	29,903,107
2011	29,480,465	0	29,480,465
2012	29,564,563	0	29,564,563
2013	29,181,897	0	29,181,897
2014	30,439,781	0	30,439,781
2015	29,868,370	0	29,868,370
2016	29,537,454	0	29,537,454
2017	30,921,897	0	30,921,897
2018	30,751,247	0	30,751,247
2019	30,776,068	0	30,776,068
2020	30,244,590	0	30,244,590

Retirement System Assets

Investment Performance

There are several different methods of approximating the rates of return on investments of the trust fund. Following is a brief comparison of the actuarial assumed rate of return as compared with rates of return on market and actuarial value bases:

a. Market Value Basis

The rate of return on a market value basis is the ratio of the appreciation (or depreciation) of assets less contributions plus disbursements to the market value at the beginning of the year plus the average of the receipts and disbursements made during the year. This may be approximated as follows:

i.	A = Market value of assets as of January 1, 2019	\$	819,449,893
ii.	B = Market value of assets as of January 1, 2020		893,295,602
iii.	C = Contributions during the period		60,922,391
iv.	D = Disbursements during the period		114,691,183
v.	Rate of return: $\frac{B - A + D - C}{A + \frac{1}{2}(C - D)}$		16.10%
vi.	Actuarial assumed rate of return for 2019		7.50%
vii.	Difference between actual and assumed rates of return, (v) – (vi)		8.60%

b. Actuarial Value Basis

The rate of return on an actuarial value basis is approximated using the same method:

i.	A = Actuarial value of assets as of January 1, 2019	\$	886,156,011
ii.	B = Actuarial value of assets as of January 1, 2020		888,759,194
iii.	C = Contributions during the period		60,922,391
iv.	D = Disbursements during the period		114,691,183
v.	Rate of return: $\frac{B - A + D - C}{A + \frac{1}{2}(C - D)}$		6.56%
vi.	Actuarial assumed rate of return for 2019		7.50%
vii.	Difference between actual and assumed rates of return, (v) – (vi)		-0.94%

Basis of the Valuation

Plan Provisions and Members Census

The plan provisions of the System and the census of members are the foundation of the valuations, since these are the present facts upon which pension payments will depend.

Participants

As a person regularly employed by the board of education, charter schools, and employees of the board of trustees are in the system

Retirement age

Normal

Age 65 or any age if age plus the years of credited service equals or exceeds 80 (Rule of 80).

If the employee terminated prior to August 28, 2017, then Age 65 or any age if age plus the years of credited service equals or exceeds 85 (Rule of 85).

Early

Age 60 with 5 years of service

Service retirement allowance

- a. 2.00% (1.25% if terminated prior to July 1, 1999 or 1.75% if hired on or after January 1, 2018) times years of credited service, subject to a maximum of 60%
- b. Times average final compensation (AFC)
- c. Subject to a maximum of 60% of AFC.
 - i. AFC is the highest average compensation for any three consecutive years of the last 10 years of service.
 - ii. Compensation is the regular wages plus what the employer pays towards the participant's health and welfare benefits.
 - iii. Minimum monthly benefit is \$10.00 for each year of credited service, up to 15 years, retirement age 65 and over.
 - iv. Unused sick leave is added to a participant's credited service and age.

Early retirement benefit

Service retirement allowance reduced five-ninths of one percent for each month of commencement prior to age 65 or the age at which the Rule of 80 (Rule of 85 if terminated prior to August 28, 2017) would have been satisfied had the employee continued working until that age, if earlier.

Disability benefit

Service retirement allowance using actual service, or 25% of AFC if larger, provided that in no case will the benefit exceed that payable if service had continued to age 65.

- a. Disability must be incurred while an employee as determined by the medical board and approved by the board of trustees.
- b. The participant must have a minimum of five years of credited service and not be eligible for normal retirement.

Continued disability is subject to routine verification.

Withdrawal benefit

Accumulated contributions of participant with interest credited to the participant's account.

Basis of the Valuation

Summary of Plan Provisions

Vested benefit

Full vesting on termination of employment after at least five years of service is provided if contributions are left with the System. The full accrued benefit is payable at age 65 or a reduced early retirement benefit prior to age 65.

Retirement options

In lieu of the benefit paid only over the lifetime of the participant, a reduced benefit payable for life of participant with:

- Option 1 Same retirement allowance continued after death to the beneficiary.
- Option 2 One-half of the retirement allowance continued after death to the beneficiary.
- Option 3 Same retirement allowance continued after death to the beneficiary. If the beneficiary predeceases the participant, the retirement allowance is adjusted back to the unreduced allowance.
- Option 4 One-half of retirement allowance continued after death to the beneficiary. If the beneficiary predeceases the participant, the retirement allowance is adjusted back to the unreduced allowance.
- Option 5 Increased retirement allowance is provided up to age 62, such that benefit provided prior to age 62 is approximately equal to the sum of the reduced retirement allowance paid after age 62 and Social Security.
- Option 6 Options 1 and 5 combined.
- Option 7 Options 2 and 5 combined.

Survivor benefits

If an active participant dies after completing 18 months of service, leaving a surviving spouse or other dependent beneficiaries, survivor benefits are payable. The widow or dependent beneficiary may elect to receive either a refund of accumulated contributions, or:

- a. A survivor who is the widow at least age 62 and married to a participant for at least one year receives \$60 per month.
- b. A widow with dependent, unmarried children under age 22 receives \$60 per month plus \$60 per dependent child, not to exceed \$180 per month. The benefit ceases when youngest child is age 22 and resumes again under (a) at age 62.
- c. If no benefits are payable under (a) or (b), minor children may receive a benefit of \$60 per child or \$180 divided among them if more than three children.
- d. If no benefits are payable under (a), (b) or (c), a dependent parent or parents may receive or share \$60 per month upon attaining age 62.

If an active participant dies after completing 5 years of service, the widow or dependent beneficiary may elect to receive either a refund of accumulated contributions or:

- a. If the survivor is the widow, a survivor benefit calculated as if the participant had been age 60 at death and elected Option 1, plus \$60 per dependent child not to exceed \$180 per month.
- b. If there is no widow, a survivor benefit calculated as if the participant had been age 60 at death and elected Option 1.

Basis of the Valuation

Summary of Plan Provisions

Return of contributions upon death

If after the death of a participant, no further monthly are payable to a beneficiary under an optional form of payment, or under the survivor benefit provisions, the participant's beneficiary shall be paid the excess, if any, of the participant's accumulated contributions over all payments made to or on behalf of the deceased participant.

DROP

Effective July 1, 2001, active participants may elect to enter the deferred retirement option plan (DROP) for up to four years. Upon entering the DROP, the participant's retirement benefit is frozen and credited to the participant's DROP account. At the end of the DROP, or upon earlier termination of employment, the DROP account is paid in a lump sum or installments, at the participant's option. During the DROP, the participant continues as an active participant, but does not pay contributions. To enter the DROP the participant must be age 65 or meet the Rule of 85. The DROP program is no longer available, ending June 30, 2008.

Contributions by participants

Participants hired before January 1, 2018 contribute 5.50% of compensation in 2018. This rate increases 0.50% per year until it reaches 9.00%. After this, the contribution rate will remain at 9.00% of compensation.

Participants hired on or after January 1, 2018 contribute 9.00% of compensation.

Accumulated contributions are credited at the rate of interest established by the board of trustees. The current crediting rate is 5% per year.

Contributions by employers

The employer contribution rate will be set at a flat 16.00% of covered payroll for Plan year 2018. This contribution rate shall be decreased by 0.50% in each subsequent Plan year until reaching 9.00% of covered payroll. After this, the employer contribution rate will remain at 9.00% of covered payroll.

Expenses

Administrative expenses are paid out of investment income.

Basis of the Valuation

Member Census Information (Last Two Years)

As of January 1	2019	2020
Active Members		
Number	5,050	5,108
Average Age	43.53	43.57
Average Service	7.71	7.47
Average Annual Base Pay	\$ 52,232	\$ 53,440
Vested Terminated Members		
Number	566	647
Average Account Balance	\$ 32,522	\$ 32,914
Non-vested Terminated Members		
Number	2,320	2,627
Average Account Balance	\$ 4,085	\$ 4,182
Benefit Recipients		
Number	4,500	4,477
Average Age	74.51	74.74
Average Monthly Benefit	\$ 1,963	\$ 1,978

Schedule of Active Member Valuation Data (Last Ten Years)

<u>Plan Year</u>	<u>Number of Active Members</u>	<u>Annual Payroll</u>	<u>Average Annual Pay</u>	<u>% Increase in Average Pay</u>
2011	4,336	218,308,928	50,348	.40%
2012	4,784	234,703,040	49,060	-2.56%
2013	4,786	225,894,414	47,199	-3.79%
2014	4,880	243,277,760	49,852	5.62%
2015	5,011	245,699,352	49,032	-1.64%
2016	5,034	252,127,288	50,085	2.15%
2017	5,101	260,223,066	51,014	1.85%
2018	5,138	265,773,659	51,727	1.40%
2019	5,050	263,772,380	52,232	0.98%
2020	5,108	272,973,377	53,440	2.3%

Basis of the Valuation

Schedule of Retirees and Beneficiaries Added/Removed From Rolls (Last 10 Years)

Plan Year	Added to Payroll		Removed from Payroll		Payroll Year-End		% Increase in Annual Allowances	Average Annual Allowance
	No.	Annual Allowances	No.	Annual Allowances	No.	Annual Allowances		
2009	N/A		N/A		N/A		N/A	N/A
2010	N/A		N/A		4,370		N/A	N/A
2011	373		156		4,587	\$ 98,927,501	N/A	\$ 21,567
2012	135	\$ 2,606,505	182	\$ 2,793,752	4,540	\$ 98,768,933	-0.16%	\$ 21,755
2013	164	\$ 3,544,756	188	\$ 2,699,920	4,516	\$ 99,629,314	0.87%	\$ 22,061
2014	313	\$ 7,711,256	140	\$ 2,288,004	4,689	\$ 105,061,832	5.45%	\$ 22,406
2015	163	\$ 3,774,578	228	\$ 3,783,237	4,624	\$ 105,066,268	0.00%	\$ 22,722
2016	151	\$ 3,279,162	188	\$ 3,058,449	4,587	\$ 105,295,884	0.22%	\$ 22,955
2017	145	\$ 3,114,108	171	\$ 2,978,925	4,561	\$ 105,434,220	0.13%	\$ 23,116
2018	158	\$ 4,044,180	193	\$ 3,526,969	4,526	\$ 105,976,561	0.51%	\$ 23,415
2019	162	\$ 3,400,180	188	\$ 3,450,225	4,500	\$ 105,995,116	0.02%	\$ 23,554
2020	161	\$ 3,739,591	184	\$ 2,728,795	4,477	\$ 106,259,608	0.25%	\$ 23,735

Basis of the Valuation

Summary of Methods and Assumptions

Interest

7.5% per annum, which includes a 2.75% allowance for inflation.

Participant account interest crediting rate

5.0% per annum.

Expenses

The rate of interest assumed is net of expenses.

Mortality – Healthy Lives

Mortality tables issued by the SOA, the RP-2014 Combined Healthy Mortality Table (rolled back to 2006), projected fully generationally using projection scale MP-2015. The mortality assumption for Inactive participants receiving benefits is increased by 10% to account for the higher mortality experienced by the Plan. Rates are shown for pre-commencement in Table 1 and post-commencement in Table 2.

Disability Mortality

RP-2014 Disabled Mortality Table (rolled back to 2006) for disabled retired Members, projected fully generationally using projection scale MP-2015. Rates are shown in Table 6.

Withdrawal

Withdrawals are assumed to occur at rates based on actual experience of the retirement system. During the first five years of membership, withdrawals are assumed to occur at the following rates:

<u>Year of Membership</u>	<u>Non-charter school employees</u>	<u>Charter school employees</u>
1 st	25.0%	35.0%
2 nd	20.0%	35.0%
3 rd	20.0%	35.0%
4 th	20.0%	25.0%
5 th	15.0%	15.0%

The rates used after the first five years of membership are shown in Table 3.

Salary scale

Salaries are assumed to increase at the rate of 5.0% per year for the first 5 years of employment and 3.50% thereafter.

Disability

Disabilities are assumed to occur at rates based on the actual experience of the retirement system. The rates used are shown in Table 5.

Basis of the Valuation

Summary of Methods and Assumptions

Interest

7.5% per annum, which includes a 2.75% allowance for inflation.

Participant account interest crediting rate

5.0% per annum.

Expenses

The rate of interest assumed is net of expenses.

Mortality – Healthy Lives

Mortality tables issued by the SOA, the RP-2014 Combined Healthy Mortality Table (rolled back to 2006), projected fully generationally using projection scale MP-2015. The mortality assumption for Inactive participants receiving benefits is increased by 10% to account for the higher mortality experienced by the Plan. Rates are shown for pre-commencement in Table 1 and post-commencement in Table 2.

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RP-2014 Disabled Mortality Table (rolled back to 2006) for disabled retired Members, projected fully generationally using projection scale MP-2015. Rates are shown in Table 6.

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<u>Year of Membership</u>	<u>Non-charter school employees</u>	<u>Charter school employees</u>
1 st	25.0%	35.0%
2 nd	20.0%	35.0%
3 rd	20.0%	35.0%
4 th	20.0%	25.0%
5 th	15.0%	15.0%

The rates used after the first five years of membership are shown in Table 3.

Salary scale

Salaries are assumed to increase at the rate of 5.0% per year for the first 5 years of employment and 3.50% thereafter.

Disability

Disabilities are assumed to occur at rates based on the actual experience of the retirement system. The rates used are shown in Table 5.

Summary of Methods and Assumptions (continued)

Normal costs are calculated as the level percentage of pay required to fund the excess of the actuarial present value of future benefits over the sum of the actuarial value of current assets and the remaining UFAAL.

Effective January 1, 2006, UFAAL was reestablished to better reflect an appropriate relationship between the normal cost and the actuarial accrued liability.

The funding requirement for each plan year is the sum of the "normal cost contribution" (equal to the normal cost for that year), plus the "actuarial accrued liability contribution." The "actuarial accrued liability contribution" is the payment required to amortize the UFAAL over 30 years, from January 1, 2006, the date that it was reestablished.

Valuation of Assets

The actuarial value of assets is determined using the assumed yield method of valuing assets. Under the assumed yield asset valuation method, the prior year's actuarial value is increased at the assumed rate of return with appropriate adjustments for contributions and disbursements to produce an expected actuarial value of assets at the end of the year. The expected actuarial value is compared to the market value of assets less the expense and contingency reserve, and 20% of the difference is added to the expected actuarial value. The actuarial value of assets was "fresh-started" as of January 1, 2006 and set equal to the market value of assets as of that date.

Changes in Methods and Assumptions from the Prior Valuation

There were no method or assumption changes made since the prior valuation.

Effective August 28, 2017, legislation passed by the Missouri General Assembly and signed into law by then Governor Eric Greitens changed several of the System's Plan Provisions. A detailed description of these changes appears at the end of Section 3.2.

Basis of the Valuation**Non-Annuitant Rates of Withdrawal, Disability and Retirement**

Attained Age	<u>Withdrawal Rates</u>		<u>Disability Rates</u>		<u>Retirement Rates</u>
	Males	Females	Males	Females	Rule of 80 / Age
20	20.40%	20.40%	.000%	.000%	0.00%
25	17.10%	17.10%	.000%	.000%	0.00%
30	12.10%	12.10%	.040%	.040%	0.00%
35	9.90%	9.90%	.040%	.040%	0.00%
40	8.30%	8.30%	.080%	.075%	0.00%
45	4.40%	4.40%	.150%	.100%	0.00%
50	2.80%	2.80%	.200%	.150%	20.00% / 0.00%
55	2.20%	2.20%	.450%	.250%	15.00% / 0.00%
60	1.70%	1.70%	.550%	.325%	20.00% / 10.00%
65	0.00%	0.00%	.000%	.000%	30.00% / 35.00%
70	0.00%	0.00%	.000%	.000%	30.00% / 30.00%
72	0.00%	0.00%	.000%	.000%	100.00% / 100.00%

Non-Annuitant Mortality Rates

<u>Death Rates</u>			<u>Death Rates</u>		
Male	Age	Female	Male	Age	Female
.000380	30	.000193	.018448	75	.015385
.000662	35	.000337	.051083	80	.039034
.000841	40	.000442	.094233	85	.067435
.001005	45	.000682	.167257	90	.122890
.001217	50	.000985	.255453	95	.185756
.001671	55	.001969	.271129	96	.196137
.002959	60	.003365	.286358	97	.210344
.004892	65	.004983	.308123	98	.218852
.006210	70	.006517	.322695	99	.226123

Basis of the Valuation
Summary of Methods and Assumptions (continued)

<u>Death Rates</u>			<u>Annuitant Mortality Rates</u>	<u>Death Rates</u>		
<u>Male</u>	<u>Age</u>	<u>Female</u>	<u>Male</u>	<u>Age</u>	<u>Female</u>	
.000380	30	.000193	.027356	75	.023365	
.000662	35	.000337	.051083	80	.039034	
.000841	40	.000442	.094233	85	.067435	
.001572	45	.000689	.167257	90	.122890	
.003521	50	.001580	.255453	95	.185756	
.003798	55	.002935	.271129	96	.196137	
.005656	60	.005521	.286358	97	.210344	
.009703	65	.009235	.308123	98	.218852	
.015686	70	.014919	.322695	99	.226123	

<u>Death Rates</u>			<u>Disability Mortality Rates</u>	<u>Death Rates</u>		
<u>Male</u>	<u>Age</u>	<u>Female</u>	<u>Male</u>	<u>Age</u>	<u>Female</u>	
.022571	30	.007450	.082067	75	.052230	
.022571	35	.007450	.109372	80	.072312	
.022571	40	.007450	.141603	85	.100203	
.022571	45	.007450	.183408	90	.140049	
.028975	50	.011535	.267491	95	.194509	
.035442	55	.016544	.283905	96	.205379	
.042042	60	.021839	.299852	97	.215240	
.050174	65	.028026	.315296	98	.223941	
.062583	70	.037635	.330207	99	.231387	

“prudently administered in an effective and efficient manner.”

Public School Retirement System of the City of St. Louis
Comprehensive Annual Financial Report
Fiscal Years 2020 and 2019

Statistical Section

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Summary

The statistical section contains information about the System not found elsewhere in the Comprehensive Annual Financial Report that is broken down into several different parts.

The first part, found on page 100, is a Schedule of Changes in Fiduciary Net Position for the last 10 fiscal years that provides detail on the additions and deductions from the plan's assets and concludes with the annual change to the fiduciary net position for each year.

The second part, found on pages 101- 105, contains membership schedules and a graph that detail information about the plan's retired, active and inactive members. The information found on these pages includes census data for retirees by payment option and type of retirement, average benefit payments for new retirees for the last five fiscal years, covered members for the last ten fiscal years and a summary of membership changes in fiscal year 2020.

There are several historical charts and graphs on page 106 that provide information on the progress of the plan's fair value of assets, employer and employee contributions, and investment income.

The last page in the statistical section provides a summary of the plan's legislative history that began on January 1, 1944, when the Missouri General Assembly created the retirement system.

**Schedules of Changes in Fiduciary Net Position
Last 10 Fiscal Years**

**Public School Retirement System
of the City of St. Louis
Schedule of Changes in Fiduciary Net Position
Last 10 Fiscal Years Ended December 31,**

Fiscal Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
<i>(as restated)</i>										
Additions by source										
Employer contributions	\$ 28,720,193	\$ 29,551,964	\$ 37,034,907	\$ 41,757,458	\$ 40,708,503	\$ 39,519,979	\$ 41,077,344	\$ 48,797,779	\$ 43,902,706	\$ 41,822,334
Employee contributions	11,879,052	12,147,663	11,814,124	11,887,933	11,664,711	12,652,029	12,591,552	14,248,567	17,019,685	17,607,279
Investment income (loss)	(5,319,851)	97,514,207	129,102,935	34,857,035	(5,488,658)	44,341,661	124,643,375	(41,828,299)	127,469,970	76,730,861
Other income	131,119	134,813	138,506	143,754	146,007	150,427	153,544	157,219	161,263	164,877
Total additions(depreciation)	35,410,513	139,348,647	178,090,472	88,646,180	47,030,563	96,664,096	178,465,815	21,375,266	188,553,624	136,325,351
Deductions by type*										
Retirement benefits	96,303,329	96,073,967	98,000,369	99,874,101	99,634,429	99,419,975	99,499,140	99,641,973	99,624,865	99,692,129
Survivor benefits	2,540,407	2,595,094	2,654,895	2,784,937	2,877,844	2,973,225	3,056,046	3,082,696	3,043,126	3,007,912
Disability benefits	3,149,322	3,246,806	3,402,037	3,524,388	3,510,745	3,479,852	3,512,352	3,616,435	3,575,042	3,412,356
Health care subsidies	2,825,430	2,752,751	2,726,158	2,696,001	2,600,225	2,515,000	2,442,339	2,381,857	2,249,449	2,129,938
Operating expenses	1,432,914	1,450,265	1,441,183	1,350,390	1,466,261	1,554,314	1,613,506	1,996,981	1,862,658	1,906,813
Contribution refunds	3,242,200	4,773,609	3,690,639	4,203,229	4,761,086	5,220,357	4,440,594	5,287,691	4,608,688	4,438,938
Total deductions by type	109,493,602	110,892,492	111,915,281	114,433,046	114,850,590	115,162,723	114,563,977	116,007,633	114,963,828	114,588,086
Change in fiduciary net position	\$ (74,083,089)	\$ 28,456,155	\$ 66,175,191	\$ (25,786,866)	\$ (67,820,027)	\$ (18,498,627)	\$ 63,901,838	\$ (94,632,367)	\$ 73,589,796	\$ 21,737,265

Retirement Benefit Schedules

Public School Retirement System of the City of St. Louis

Retired Member and Beneficiaries by Payment Option & Type On January 1, 2020

<u>Option</u>	<u>Service Benefit</u>	<u>Disability Benefit</u>	<u>Survivor Benefit</u>	<u>Total</u>
0	3,338	192	285	3,815
1	134	14	-	148
2	80	5	-	85
3	186	17	-	203
4	176	6	-	182
5	22	1	-	23
6	13	5	-	18
7	3	-	-	3
Total	3,952	240	285	4,477

Amount of Annual Benefits By Payment Option & Type On January 1, 2020

<u>Option</u>	<u>Service Benefit</u>	<u>Disability Benefit</u>	<u>Survivor Benefit</u>	<u>Total</u>
0	\$ 85,407,357	\$ 2,877,817	\$ 3,482,422	\$ 91,767,596
1	2,411,304	184,112	-	2,595,416
2	1,894,243	117,333	-	2,011,576
3	3,922,696	238,317	-	4,161,013
4	4,653,421	133,370	-	4,786,791
5	543,686	9,911	-	553,597
6	262,947	48,317	-	311,264
7	72,357	-	-	72,357
Total	\$ 99,168,011	\$ 3,609,177	\$ 3,482,422	\$ 106,259,610

- Option 1 Same retirement allowance continued after death to the beneficiary.
- Option 2 One-half of the retirement allowance continued after death to the beneficiary.
- Option 3 Same retirement allowance continued after death to the beneficiary. If the beneficiary predeceases the participant, the retirement allowance is adjusted back to the unreduced allowance.
- Option 4 One-half of retirement allowance continued after death to the beneficiary. If the beneficiary predeceases the participant, the retirement allowance is adjusted back to the unreduced allowance.
- Option 5 Increased retirement allowance is provided up to age 62, such that benefit provided prior to age 62 is approximately equal to the sum of the reduced retirement allowance paid after age 62 and Social Security.
- Option 6 Options 1 and 5 combined.
- Option 7 Options 2 and 5 combined.

Retirement Benefit Schedules

**Public School Retirement System
of the City of St. Louis**
Average Annual Benefit Payments By Payment Option Type
On January 1, 2020

Option	Service Benefit	Disability Benefit	Survivor Benefit	All
0	\$ 25,586	\$ 14,989	\$ 12,219	\$ 24,054
1	17,995	13,151	-	17,537
2	7,795	23,467	-	23,666
3	21,090	14,019	-	21,788
4	26,440	22,228	-	26,301
5	24,713	9,911	-	24,069
6	20,227	9,663	-	18,310
7	24,119	-	-	24,119
All	\$ 24,982	\$ 15,022	\$ 11,893	\$ 23,554

Average Monthly Benefit Payments By Payment Option & Type
On January 1, 2020

Option	Service Benefit	Disability Benefit	Survivor Benefit	All
0	\$ 2,207	\$ 1,249	\$ 1,018	\$ 2,005
1	1,500	1,096	-	1,461
2	650	1,956	-	1,972
3	1,758	1,168	-	1,816
4	2,203	1,852	-	2,192
5	2,059	826	-	2,006
6	1,686	826	-	1,526
7	2,010	-	-	2,010
All	\$ 2,082	\$ 1,252	\$ 991	\$ 1,963

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- Option 5 Increased retirement allowance is provided up to age 62, such that benefit provided prior to age 62 is approximately equal to the sum of the reduced retirement allowance paid after age 62 and Social Security.
- Option 6 Options 1 and 5 combined.
- Option 7 Options 2 and 5 combined.

Retirement Benefit Schedules

Public School Retirement System of the City of St. Louis

Schedule of Average Benefit Payments Last Five Fiscal Years Ended December 31st

Retirement Year(s)	0 - 5	6 - 10	11 - 15	16 - 20	21 - 25	26 - 30	31+
2016							
Average Monthly Benefit	\$539	\$682	\$986	\$1,638	\$2,608	\$2,951	\$3,476
Average Monthly Salary	\$5,156	\$3,971	\$4,327	\$4,718	\$5,570	\$5,393	\$5,793
Number of Retirees	6	17	17	30	16	24	14
2017							
Average Monthly Benefit	\$397	\$706	\$1,034	\$1,576	\$2,184	\$3,165	\$3,740
Average Monthly Salary	\$4,273	\$4,259	\$4,030	\$4,588	\$5,012	\$5,559	\$6,385
Number of Retirees	10	23	13	21	14	27	33
2018							
Average Monthly Benefit	\$340	\$724	\$1,006	\$1,942	\$2,500	\$2,741	\$3,293
Average Monthly Salary	\$3,524	\$4,779	\$4,346	\$5,136	\$5,430	\$4,894	\$5,603
Number of Retirees	11	22	16	32	25	20	20
2019							
Average Monthly Benefit	\$474	\$646	\$1,095	\$1,505	\$2,418	\$2,872	\$4,002
Average Monthly Salary	\$4,790	\$4,204	\$4,412	\$4,167	\$5,333	\$5,156	\$6,696
Number of Retirees	10	31	20	26	19	26	23
2020							
Average Monthly Benefit	\$424	\$583	\$1,344	\$1,838	\$2,297	\$3,020	\$3,455
Average Monthly Salary	\$5,196	\$3,742	\$4,906	\$4,752	\$4,818	\$5,662	\$5,945
Number of Retirees	13	20	25	34	20	20	31
2016 - 2020							
Average Monthly Benefit	\$424	\$668	\$1,119	\$1,720	\$2,411	\$2,959	\$3,612
Average Monthly Salary	\$4,557	\$4,210	\$4,466	\$4,700	\$5,242	\$5,339	\$6,134
Number of Retirees	50	113	91	143	94	117	121

Note: The calculations for the 2015 – 2019 monthly averages are weighted using the sum of an average for each year x number of retirees each year ÷ by the 2016 – 2020 number of retirees.

Schedule of Covered Members

Public School Retirement System
of the City of St. Louis

Schedule of Covered Members
Last Ten Fiscal Years Ended December 31st

	2020		2019		2018		2017		2016	
Member Type	Covered Members	Percentage of Total	Covered Members	Percentage of Total	Covered Members	Percentage of Total	Covered Members	Percentage of Total	Covered Members	Percentage of Total
Active	5,108	39.7%	5,050	40.6%	5,138	41.3%	5,101	41.8%	5,034	42.3%
Inactive	3,274	25.5%	2,886	23.2%	2,791	22.4%	2,554	20.9%	2,271	19.1%
Retired (includes Beneficiaries)	4,477	34.8%	4,500	36.2%	4,526	36.3%	4,561	37.3%	4,587	38.6%
Total	12,859	100%	12,455	100%	12,455	100%	12,216	100%	11,892	100%

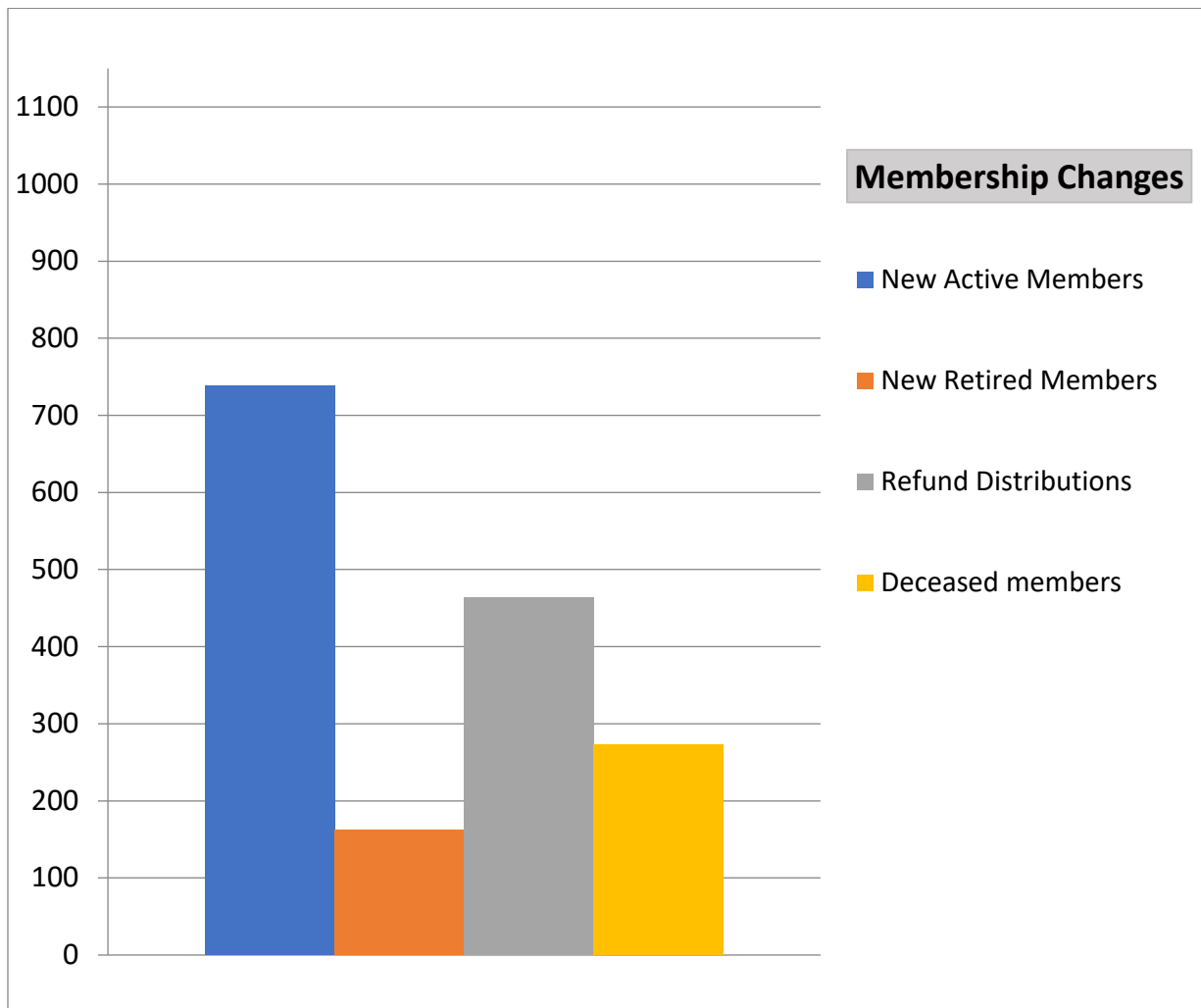
	2015		2014		2013		2012		2011	
Member Type	Covered Members	Percentage of Total	Covered Members	Percentage of Total	Covered Members	Percentage of Total	Covered Members	Percentage of Total	Covered Members	Percentage of Total
Active	5,011	43.0%	4,880	42.9%	4,788	43.7%	4,784	40.4%	4,336	40.0%
Inactive	2,012	17.3%	1,798	15.8%	1,643	15.0%	1,958	17.4%	1,935	17.8%
Retired (includes Beneficiaries)	4,624	39.7%	4,689	41.3%	4,516	41.3%	4,540	40.2%	4,587	42.2%
Total	11,647	100%	11,367	100%	10,945	100%	11,282	100%	10,858	100%

Membership Changes

The Year in Review

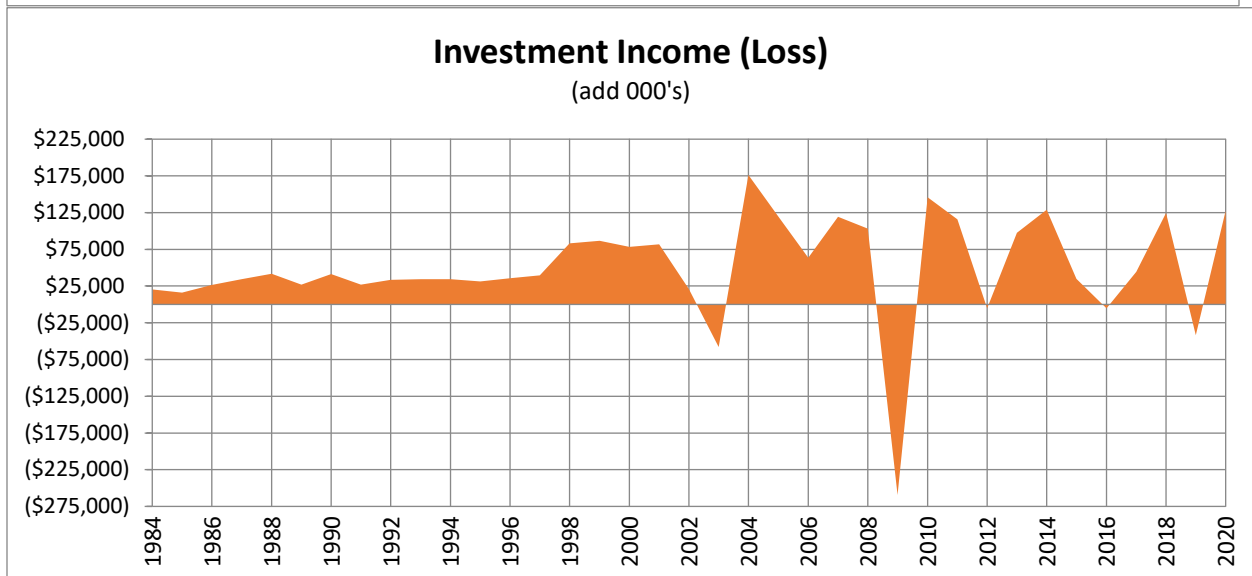
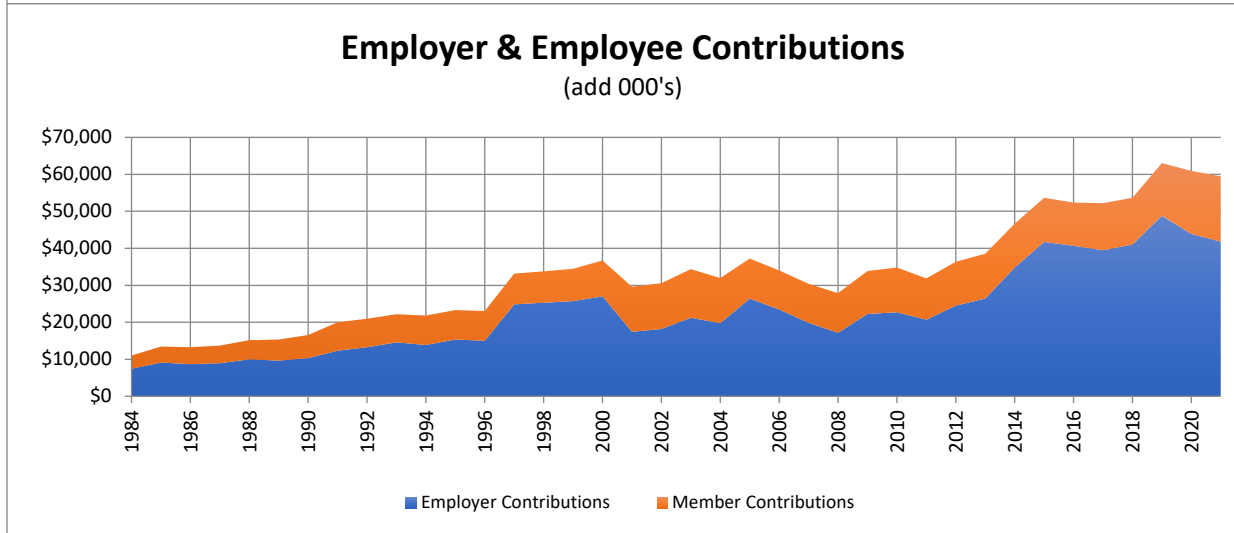
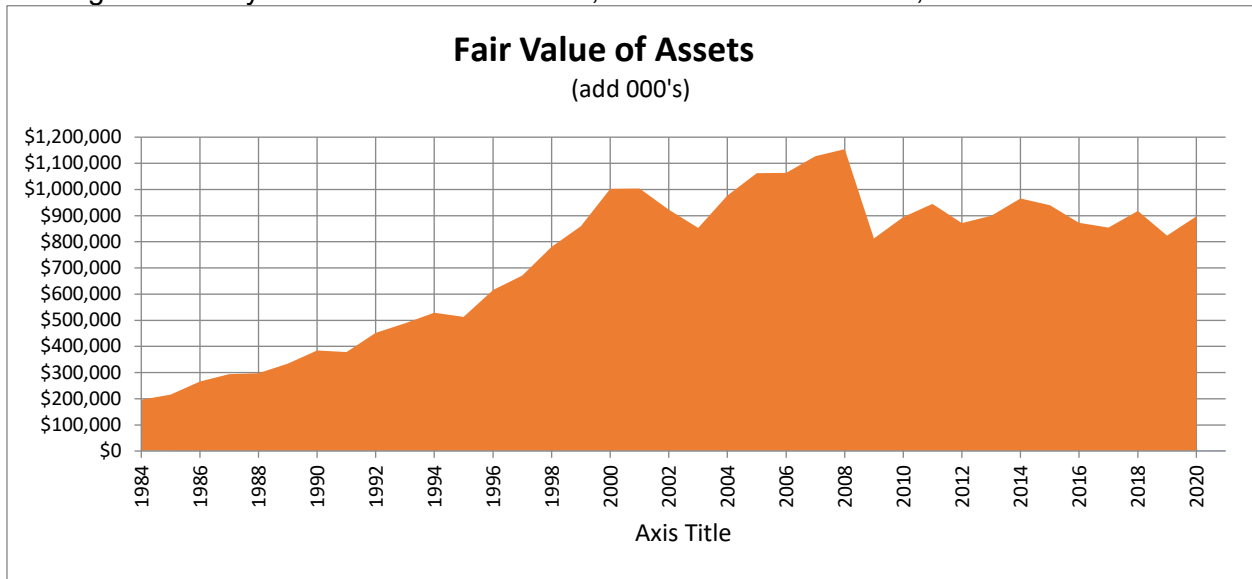
During the fiscal year ended December 31, 2020, PSRSSTL added 738 new active members and 163 new retired members to payroll. The retirement system processed 464 refund distributions for members who left the System and bid farewell to 273 members due to death.

Fiscal Year 2020



Charts and Graphs

These charts and graphs show changes in fair value of assets, contributions, and investment earnings for fiscal years ended December 31, 1984 thru December 31, 2020.



Public School Retirement System of the City of St. Louis

- 1944 - Creation of the retirement system by the Missouri General Assembly
- 1961 - Plan provisions revised, active members able to choose the “old plan” or “new plan”
- 1969 - Credited Service allowed for time lost from 1944 - 1947
- 1972 - Credited Service options added, survivor, disability and minimum benefits added, another chance for “old plan” members to upgrade to the “new plan”
- 1975 - First increase in benefits granted to certain retired teacher
- 1978 - Service limits removed, survivor benefits revised, employee contributions set at 3%, Trustees granted rule-making authority, 1st back-to-work provision for some retirees
- 1979 - Plan provisions revised to allow sick leave balances to be added to credited service and age requirements for retirement, early retirement and survivor benefits revised
- 1981 - Plan provisions upgraded, insurance benefits improved, actuarial cost method changed, broadening of investment authority for the Board of Trustees
- 1984 - Survivor and disability benefits upgraded, 2nd back-to-work provision for some retirees
- 1985 - First supplemental early retirement benefit added for certain retirees
- 1987 - Another chance for “old plan” members to join “new plan,” increase in minimum pension benefit, administrative changes made
- 1988 - Survivor and supplemental benefits enhanced
- 1989 - Certain plan provision improvements
- 1990 - Supplemental benefits extended for some retirees
- 1993 - Supplemental benefits enhanced for some retirees
- 1996 - Service purchases allowed for some lay-off periods, investment trustee replaced with school administrator trustee, COLA provisions added
- 1997 - COLA provision added for certain retirees
- 1998 - Employee contribution rate set at 4.5%, pension factor set at 2%, catch-up COLA for some retirees, employer contribution rate set at 8.3% for three years
- 1999 - Employee contribution rate set at 5%
- 2001 - COLA provisions added for some retirees, DROP added until 2005, employer contribution rate set at 8%, employer contribution rate to be actuarial determined beginning in 2002 and future years
- 2002 - Credited service rules revised, pre-tax transfers allowed between certain retirement plans, Charter School provisions added and clarified, new social security leveling pension benefit options, actuarial provisions revised for more Board of Trustees flexibility, amortization limit set at 30 years
- 2007 - Some administrative changes, granted the Board of Trustees authority to increase pension within strict guidelines, Board of Trustees educational requirements expanded, actuarial cost reporting revised for all Missouri retirement plans
- 2009 - State reporting requirements revised for all Missouri retirement plans
- 2014 - General provisions revised for all Missouri retirement plans
- 2017 - Plan provisions changed, effective January 1, 2018, new active members required to contribute 9%, current active members to contribute 9% after a series of annual increases of 0.5% reaches ceiling, beginning with 16% employers to contribute 9% after a series of annual decreases of 0.5% reaches floor, pension factor for new active members reduced to 1.75%, pension factor for current members to remain 2.0%, and effective August 28, 2017, “Rule of 85” changed to “Rule of 80”

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of the City of St. Louis**
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