

CITY OF KNOXVILLE PENSION SYSTEM

A Pension Trust Fund of the City of Knoxville, Tennessee

Comprehensive Annual Financial Report

Fiscal Year Ended June 30, 2018

(with comparative financial statements
for the fiscal year ended June 30, 2017)

Prepared by the City of Knoxville Pension Board

Kristi Paczkowski, Executive Director

Stephanie Cooper, Accounting Manager

TABLE OF CONTENTS

Introductory Section

Letter of Transmittal	i
Organizational Chart	v
Administrative Organization	vi
GFOA Certificate of Achievement	viii

Financial Section

Independent Auditor’s Report	1
Management’s Discussion and Analysis	4
Basic Financial Statements:	
Statements of Fiduciary Net Position.....	8
Statements of Changes in Fiduciary Net Position.....	9
Notes to Financial Statements	10
Required Supplementary Information:	
Schedule of Changes in the Net Pension Liability and Related Ratios.....	43
Schedule of Employer Contributions	44
Schedule of Investment Returns	45
Supporting Schedules:	
Schedule of Administrative Expenses	46
Schedule of Investment Expenses	47

Investment Section

Investment Consultant’s Letter of Investment Activity	48
Outline of Investment Policies	52
Investment Objectives	52
Investment Performance	53
Asset Allocation	54
Top Ten Stock and Bond Holdings	55
Schedule of Investment Commissions	57
Schedule of Investment Fees.....	59
Schedule of Investment Summary.....	60

TABLE OF CONTENTS

Actuarial Section

Actuary's Certification Letter	61
Summary of Actuarial Assumptions and Methods	63
Schedule of Active Member Valuation Data	69
Schedule of Retiree and Beneficiary Data	70
Solvency Test	72
Analysis of Financial Experience	73
Schedule of Funding Progress	74

Statistical Section

Schedule of Changes in Net Plan Position – 10 Years	75
Schedule of Benefits by Type of Benefit.....	75
Schedule of Retired Members by Type of Benefit	77
Average Monthly Benefit Payments to New Retirees	78

Compliance Section

Independent Auditor's Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with <i>Government Auditing Standards</i>	79
Schedule of Prior Year Findings	81

INTRODUCTORY SECTION

MEMBERS

Mayor Madeline Rogero
Sam Bills
Linda Gay Blanc
Mark Fortner
Stephen King
Michael Paseur
Finbarr Saunders
John Tillett
James York

CITY OF KNOXVILLE



STAFF

Whitney Bean
Stephanie Cooper
Nancy Curnutt

PENSION BOARD

Kristi Fowler Paczkowski, CPA - Executive Director

December 13, 2018

Members of the Pension Board
City of Knoxville Pension System

The Comprehensive Annual Financial Report (CAFR) of the City of Knoxville Pension System (the System) for the fiscal year ended June 30, 2018 is herewith submitted. The CAFR is an overview intended to give the reader reliable and useful information which describes the financial position of the System and provides assurance that the System is in compliance with applicable legal provisions. Management assumes full responsibility for the accuracy and reliability of the information contained in this report, based upon a comprehensive framework of internal control that it has established for this purpose. Because the cost of internal control should not exceed anticipated benefits, the objective is to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements. Monitoring and evaluation of internal controls is a function that is maintained on an ongoing basis.

U.S. generally accepted accounting principles (GAAP) require that management provide a narrative introduction, overview, and analysis to accompany the basic financial statements in the form of Management's Discussion and Analysis (MD&A). This letter of transmittal is designed to complement MD&A and should be read in conjunction with it. The System's MD&A can be found in the Financial Section of this report.

Profile of the System

The System was established in 1929 to provide retirement, survivor and disability benefits to eligible City of Knoxville (City) employees. Plan H is the only open plan and covers both general government and uniformed safety employees and is a hybrid defined benefit plan. A general government and uniformed body employee hired after January 1, 2013 are granted automatic membership into the System at their date of hire and are required to contribute 6% of their regular bi-weekly salary to help fund the System. All regular employees of the City are covered members of the System under one of six defined benefit plans established by the City of Knoxville Charter Article XIII.

Plan A is a closed plan primarily covering Board of Education members and has 5 remaining participants who have not retired from the System. Plan B is also a closed plan and has only 1 remaining active participant. Plan C is a closed plan covering the uniformed bodies of fire and police hired prior to January 1, 2013 and has 567 participants who have not retired from the System. Plan F is a closed plan covering retired police and fire and has no remaining active participants. Plan G is a closed plan covering general government employees hired between January 1, 1997 and December 31, 2012. There are 175 and 297 active participants remaining between G-1 and G-2 divisions respectively of plan G. The six plans are described in more detail in the Notes to the Financial Statements which can be found in the Financial Section of this report.

The System provides normal, early and deferred retirement benefit options. At the time of retirement, a member may elect to receive a reduced benefit in order to provide one of the following benefits: 1) a lifetime benefit to a spouse upon the member's death; or 2) a life annuity to the member with a guaranteed payment for sixty (60), one hundred twenty (120), or one hundred eighty (180) months as selected by the member to a beneficiary(ies); or 3) a life annuity to the member payable monthly and upon the death of the member, a lump sum amount could be payable to the member's beneficiary(ies) equal to the difference, if any, between the actuarially determined single sum value of the benefit and the total of the monthly payments paid to the retired member. The System also provides disability benefits, both occupational and non-occupational. Employees in Plans A, C and G are vested in the System after five years of service. Employees in Plans B and H are vested in the System after ten years of service.

The System is considered a part of the City of Knoxville's financial reporting entity and is included in the City's CAFR as a pension trust fund, a fiduciary fund type. The City's CAFR is also submitted to the Government Finance Officers Association for annual review under the Certificate of Achievement for Excellence in Financial Reporting program and is available online at www.knoxvilletn.gov/government/city_departments_offices/Finance/comprehensive_annual_financial_report/.

Funding Status

The System's funding objective is to meet long-term benefits promised through employee and employer contributions that remain approximately level as a percent of member payroll. Increased funding improves the ratio of assets and provides greater investment potential. The advantage of a well-funded plan is that participants are confident that assets are committed to the payment of their current and future benefits.

The System ended the year with Fiduciary Net Position equaling 74.32% of Total Pension Liability based on the entry age normal funding actuarial method. The goal of the System is to be fully funded. The Total Pension Liability and Fiduciary Net Position as of June 30, 2018 were \$794,638,156 and \$590,587,973 respectively. Additional information relative to the funded status of the System is provided in the Actuarial Section of this report.

Investments

The primary investment objective of the System is to ensure, over the long-term, an adequate level of assets to fund the benefits guaranteed to the System members and their beneficiaries at the time they are payable. A secondary investment objective is to earn a total rate of return after all expenses that equals or exceeds the actuarial investment return assumption. The Pension Board (the Board), along with help from its actuary and investment consultant, uses the System's asset allocation as the primary tool to achieve this objective. As this is a long-term projection and investments are subject to short-term volatility, the main investment focus of the Board toward the total System's assumed rate of return and that of each investment manager will be on performance relative to the appropriate asset class, mix of asset classes, and peer performance over relevant time periods. Each manager is expected to maintain a consistent philosophy and style, perform well versus others utilizing the same style, and add incremental value after costs.

An integral part of the overall investment policy is the strategic asset allocation policy. The targeted strategic asset allocation is designed to provide an optimal diversification to reduce risk and maximize total rate of return relative to risk. This emphasizes a maximum diversification of the portfolio that protects the System from declines that a particular asset class may experience in a given period. The Board adopted a new asset allocation model in September 2017. At that time, specific allocations to Global Bonds, Core Plus Bonds, Long Bonds, and TIPS were eliminated and combined into one class called Core/Core Plus. The System continually reviews asset allocation to reflect the current investment market with a focus on lowering the volatility of the overall fund.

The System's actual investment return of 7.00% for the year ended June 30, 2018 was only slightly below the actuarially expected rate of return of 7.25%. However, the employer contributions will continue to be above the long-term annual costs of the plan which places stress on the City's overall financial environment. A summary of the System's June 30, 2018 asset allocation can be found in the Investment Section of this report along with more detailed investment information.

Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the City of Knoxville Pension System for its CAFR for the fiscal year ended June 30, 2017. The Certificate of Achievement is a prestigious national award recognizing excellence in the preparation of state and local government financial reports. To be awarded the Certificate of Achievement for Excellence in Financial Reporting, a government unit must publish an easily readable and efficiently organized report, the contents of which meet or exceed program standards. The report must satisfy both generally accepted accounting principles and applicable legal requirements. A Certificate of Achievement is valid for one year. The System has received a Certificate of Achievement for six years in a row. We believe this current report continues to meet the Certificate of Achievement program requirements and will submit it to the GFOA for consideration again this year.

Conclusion

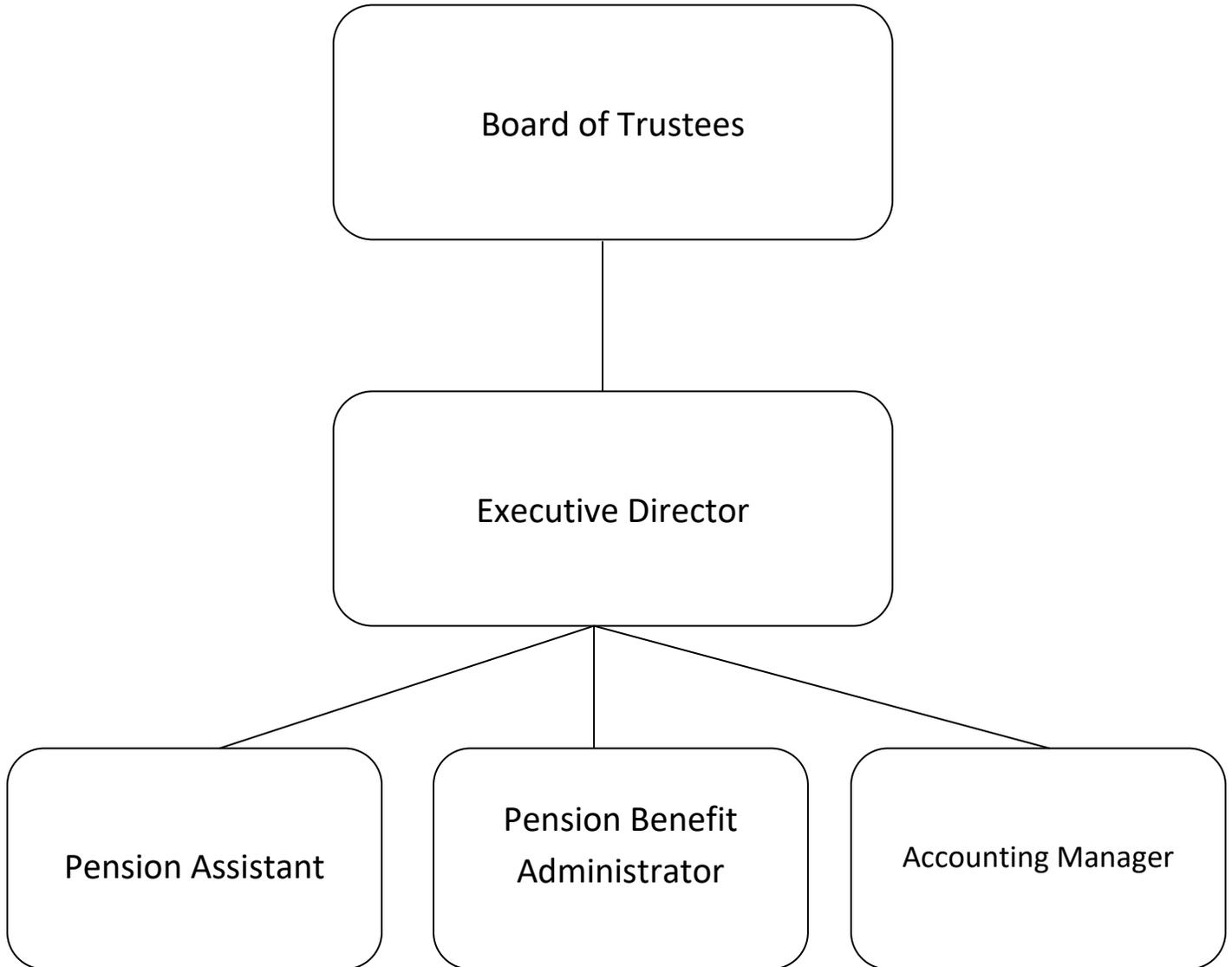
This annual report reflects the combined efforts of the System staff members and is intended to provide complete and reliable information as a basis for making management decisions and determination of responsible stewardship of the assets of the System.

Respectfully submitted,



Kristi F. Paczkowski, CPA
Executive Director

Organizational Chart



Administrative Organization

Board of Trustees

Mayor Madeline Rogero, Chair

Michael Passeur, Vice-Chair
General Government Seat A

Jim York, Secretary
City Finance Director

Sam Bills
Mayoral Appointee

Linda Gay Blanc
Mayoral Appointee

Mark Fortner
Uniformed Bodies Seat A

Stephen King
General Government Seat B

Finbarr Saunders
City Council Representative

John Tillett
Uniformed Bodies Seat B

Administrative Staff

Whitney Bean

Stephanie Cooper

Nancy Curnutt

Kristi Paczkowski

Actuary

Findley (formerly BPS&M)
Brentwood, Tennessee

Auditor

Crosslin, PLLC
Nashville, Tennessee

Legal

Kathy D. Aslinger
Kennerly, Montgomery & Finley
Knoxville, Tennessee

Custodian

Northern Trust
Chicago, Illinois

Investment Consultant

Summit Strategies Group
St. Louis, Missouri

Investment Managers**

57 Stars, LLC
Washington, DC

Aberdeen Asset Management
Stamford, CT

Acadian Asset Management LLC
Boston, Massachusetts

Adams Street Partners, LLC
Chicago, Illinois

Aether Investment Partners
Denver, Colorado

Administrative Organization (Continued)

Investment Managers** (Continued)

Blackstone Alternative Asset Management
New York, New York

Eagle Capital Management
New York, New York

Fort Washington Investment Advisors, Inc.
Cincinnati, Ohio

Gryphon International Investment Corp.
Toronto, Ontario Canada

Income Research & Management
Boston, Massachusetts

NB Alternatives Advisers, LLC
Dallas, Texas

Northern Trust Investments, Inc.
Chicago, Illinois

PanAgora Asset Management, Inc.
Boston, Massachusetts

Parametric
Minneapolis, Minnesota

Pictet Asset Management
London, England

Pinnacle Associates LTD
New York, New York

Principal Global Investors
Des Moines, Iowa

RREEF
New York, New York

Schroder Investment Management
New York, New York

Silchester International Investors
New York, New York

Top Tier Capital Partners, LLC
San Francisco, California

Tortoise Capital Advisors, LLC
Leawood, Kansas

William Blair & Company
Chicago, Illinois

**Refer to the Schedules of Fees and Commissions (pages 57-59) for details of fees paid to each Investment Manager.



Government Finance Officers Association

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Achievement for
Excellence in
Financial
Reporting

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City of Knoxville Pension System
Tennessee

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2017

Christopher P. Morrill

Executive Director/CEO

FINANCIAL SECTION



Independent Auditor's Report

To the Members of the Pension Board
City of Knoxville Pension System
Knoxville, Tennessee

Report on the Financial Statements

We have audited the accompanying financial statements of the City of Knoxville Pension System (the "System"), a pension trust fund of the City of Knoxville, Tennessee, which comprise the statements of fiduciary net position as of June 30, 2018 and 2017, and the related statements of changes in fiduciary net position for the years then ended, and the related notes to the financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

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.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit 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 auditor's 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 entity'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 entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.



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

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the City of Knoxville Pension System's fiduciary net position as of June 30, 2018 and 2017, and the changes in its fiduciary net position, for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Emphasis of Matter

As discussed in Note 1(a), the financial statements of the System are intended to present only the statements of fiduciary net position and changes in fiduciary net position of the System. They do not purport to, and do not, present fairly the financial position of the City of Knoxville, Tennessee, as of June 30, 2018 and 2017, and the changes in its financial position for the years then ended in accordance with accounting principles generally accepted in the United States of America. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 4 - 7 and the schedules of changes in the net pension liability and related ratios, employer contributions, and investment returns, on pages 43 - 45 be presented to supplement the financial statements. Such information, although not a part of the 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 financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.



Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements of the City of Knoxville Pension System. The introductory section, supporting schedules, investment section, actuarial section, and statistical section, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the financial statements.

The supporting schedules are the responsibility of management and were derived from and relate 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 audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, supporting schedules are fairly stated, in all material respects, in relation to the financial statements as a whole.

The introductory, investment, actuarial and statistical sections have not been subjected to the auditing procedures applied in the audit of the financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 13, 2018, on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.

A handwritten signature in black ink that reads "Crosslin, PLLC".

Nashville, Tennessee
December 13, 2018

CITY OF KNOXVILLE PENSION SYSTEM

Management's Discussion and Analysis

This is an analysis and overview of the financial activities of the City of Knoxville Pension System (the System) for the years ended June 30, 2018 and 2017. For more detailed information, please refer to the basic financial statements, notes to the financial statements, required supplementary information and supporting schedules.

Financial Highlights

- The net position restricted for pension benefits at the close of the plan year ending June 30, 2018 is \$591 million. All of the net position is available to meet the System's ongoing obligations to plan participants and their beneficiaries.
- The System's net position increased \$19.3 million, or 3.4%, primarily as a result of favorable financial markets during the fiscal year. Investment earnings exceeded investment expenses during the year resulting in net investment income of \$37.6 million.
- Additions to net position included \$4.2 million in contributions from active members and \$25.7 million in contributions from the City of Knoxville.
- Deductions from net position increased \$1.3 million, or 2.7%, from the prior year primarily due to the annual cost of living adjustment to the benefits paid to retired members and beneficiaries.
- The System's overall funding level increased slightly from the prior year. The Plan Fiduciary Net Position as a Percentage of Total Pension Liability was 74.32% as of June 30, 2018 and 73.63% as of June 30, 2017.

Overview of the Financial Statements

The following discussion and analysis is intended to serve as an introduction to the System's financial statements which follow. The financial statements include:

1. Statements of Fiduciary Net Position
2. Statements of Changes in Fiduciary Net Position
3. Notes to the Financial Statements
4. Required Supplementary Information

Each *Statement of Fiduciary Net Position* is a snapshot of account balances at year-end. It indicates the assets available for future payments to retirees and any current liabilities that are owed at this time.

Each *Statement of Changes in Fiduciary Net Position* shows the additions to and deductions from the System's net position over the current year.

The Governmental Accounting Standards Board (GASB) promulgates the requirements for financial statement presentation and certain disclosures for state and local governmental entities. The financial statements, notes to financial statements, and required supplementary information presented in this report were prepared in compliance with applicable GASB pronouncements.

The Statement of Fiduciary Net Position and the Statement of Changes in Fiduciary Net Position report information about the System’s activities. These statements include all assets and liabilities using the accrual basis of accounting. Investment activities have been reported based on trade dates and were valued pursuant to independent outside sources. Both realized and unrealized gains and losses are shown on investments, and all capital assets are depreciated over their useful lives.

Notes to the Financial Statements provide additional information which is essential for a full understanding of the data provided in the basic financial statements.

Required Supplementary Information provides additional information and details about the System’s progress in funding its future obligations and the history of employer and employee contributions.

Financial Analysis

There are several ways to measure the System’s financial status. One way is to determine the net position available to pay benefits. Net position is the difference between total assets and total liabilities. The table below provides a summary of the System’s net position as of June 30, 2018 and the preceding two years for comparative purposes.

	As of June 30		
	2018	2017	2016
Assets			
Investments	\$ 590,419,747	\$ 571,008,521	\$ 526,018,712
Cash on Hand	1,548	1,163	1,904
Receivables	1,465,478	1,965,430	2,630,502
Capital Assets	<u>2,891</u>	<u>6,055</u>	<u>8,279</u>
	591,889,664	572,981,169	528,659,397
Liabilities	<u>1,301,691</u>	<u>1,684,307</u>	<u>2,037,966</u>
Fiduciary Net Position	<u>\$ 590,587,973</u>	<u>\$ 571,296,862</u>	<u>\$ 526,621,431</u>

The System's net position decreased in the fiscal year ending in 2016 but increased during the fiscal years ending in 2017 and 2018 due to market volatility experienced in both domestic and international equity securities and energy sector investments. The following table provides a summary of the changes in net position for these three years.

	For the Fiscal Year Ended June 30		
	2018	2017	2016
Additions to Fiduciary Net Position			
Net Investment Income/(Loss)	\$ 37,559,310	\$ 63,411,480	\$ (1,048,951)
Contributions	29,933,908	28,208,969	28,315,680
Total Additions	<u>67,493,218</u>	<u>91,620,449</u>	<u>27,266,729</u>
Deductions from Fiduciary Net Position			
Benefit Payments	46,640,954	45,379,447	43,946,206
Employee Refunds	853,221	844,031	771,127
Administrative Expenses	707,932	721,540	679,971
Total Deductions	<u>48,202,107</u>	<u>46,945,018</u>	<u>45,397,304</u>
Change in Fiduciary Net Position	19,291,111	44,675,431	(18,130,575)
Fiduciary Net Position at Beginning of Year	571,296,862	526,621,431	544,752,006
Fiduciary Net Position at End of Year	<u>\$ 590,587,973</u>	<u>\$ 571,296,862</u>	<u>\$ 526,621,431</u>

Additions to Fiduciary Net Position

The funds needed to pay benefits are accumulated from the contributions made by the City and member employees and income generated from the System's investments. Earnings or losses on investments are reported net of investment management expenses. The employer contribution rates for Plan C were 17.77%, 44.11%, and 44.85% of covered payroll for the fiscal years ended 2018, 2017, and 2016, respectively with an additional contribution towards the unfunded liability of \$10,135,000 for the fiscal year ended 2018. The employer contribution rates for Plans G, A, and B were 7.39%, 20.62%, and 20.34% for those same periods with an additional contribution towards the unfunded liability of \$4,370,000 for the fiscal year ended in 2018. The employer contributions rates for 2017 and 2016 for plans A, B, C and G included the amount of unfunded liability payments as a percentage of covered payroll whereas the City has begun to contribute the unfunded actuarial evaluation calculated amount in total beginning in fiscal year 2018. The City made contributions to Plan H at a rate of 8.7%, 8.91% and 8.33% of covered payroll for general government employees in fiscal years ended 2018, 2017, and 2016, respectively. Plan H contributions for the uniformed bodies were 11.69%, 10.36%, and 12% for those same periods.

Employee contributions are at a fixed rate of 6% of regular pay. Fluctuations in base wages will cause a corresponding increase or decrease to the employees' contributions. In 2016, the System permitted certain members to purchase credited service for military service prior to their employment with the City of Knoxville. This resulted in a one-time employee contribution of \$153,359 in the year ended 2017 and

\$209,606 in the year ended 2016. For the fiscal year ended in 2018, employee contributions decreased 4.6% and for the year ended in 2017, employee contributions increased 0.1%.

Deductions from Fiduciary Net Position

Annual expenses of the System include retirement benefits, DROP distributions, refunds of employee contributions to terminated members and administrative expenses. Deductions for the current fiscal year increased 2.7% from the prior year, which was an increase of 3.4% from the year before that. The increases are primarily attributable to higher benefit payments. These increased payments are the result of the annual cost of living adjustments.

Requests for Information

This financial report is designed to provide a general overview of the City of Knoxville Pension System's finances for all of those with an interest in the System's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be directed to:

City of Knoxville Pension System
Attention: Executive Director
917B East Fifth Avenue
Knoxville, Tennessee 37917

**CITY OF KNOXVILLE PENSION SYSTEM
STATEMENTS OF FIDUCIARY NET POSITION**

As of June 30,

	<u>2018</u>	<u>2017</u>
<u>ASSETS</u>		
Investments Held by Trustee		
Cash and Cash Equivalents	\$ 6,821,386	\$ 11,841,427
United States Government Securities	95,056,941	48,441,831
State and Municipal Government Securities	1,123,228	1,126,103
International Securities	139,015,120	184,945,776
Domestic Corporate Bonds and Debentures	42,492,483	61,352,072
Real Assets	89,470,031	84,806,252
Alternative Assets	53,292,543	50,430,624
Domestic Equity Securities	<u>163,148,015</u>	<u>128,064,436</u>
Total Investments Held by Trustee	<u>590,419,747</u>	<u>571,008,521</u>
Cash on Hand	<u>1,548</u>	<u>1,163</u>
Receivables		
Pending Sale Proceeds	267,997	562,822
Accrued Interest and Dividends	1,197,249	1,399,857
Other Receivables	<u>232</u>	<u>2,751</u>
Total Receivables	<u>1,465,478</u>	<u>1,965,430</u>
Capital Assets, Net of Accumulated Depreciation	<u>2,891</u>	<u>6,055</u>
Total Assets	<u>591,889,664</u>	<u>572,981,169</u>
<u>LIABILITIES</u>		
Accounts Payable - Administrative	544,891	583,419
Liability for Investment Purchases Pending	<u>756,800</u>	<u>1,100,888</u>
Total Liabilities	<u>1,301,691</u>	<u>1,684,307</u>
Net Position Restricted for Pension Benefits	<u>\$ 590,587,973</u>	<u>\$ 571,296,862</u>

The accompanying notes are an integral part of these financial statements.

CITY OF KNOXVILLE PENSION SYSTEM
STATEMENTS OF CHANGES IN FIDUCIARY NET POSITION

For the Years Ended June 30,

	<u>2018</u>	<u>2017</u>
<u>ADDITIONS TO FIDUCIARY NET POSITION</u>		
Net Investment Earnings		
Interest	\$ 3,930,539	\$ 4,953,165
Dividends	4,295,021	4,137,600
Net Appreciation in Fair Value of Investments	32,838,044	57,925,150
Other Income	<u>362,770</u>	<u>165,107</u>
Total Investment Earnings	41,426,374	67,181,022
Less Investment Expense (See Page 47)	<u>(3,867,064)</u>	<u>(3,769,542)</u>
Net Investment Earnings	<u>37,559,310</u>	<u>63,411,480</u>
Contributions		
City of Knoxville Employer Contributions	25,719,853	23,791,166
Employee Contributions	<u>4,214,055</u>	<u>4,417,803</u>
Total Contributions	<u>29,933,908</u>	<u>28,208,969</u>
Total Additions	<u>67,493,218</u>	<u>91,620,449</u>
<u>DEDUCTIONS FROM FIDUCIARY NET POSITION</u>		
Participant Benefit Payments	<u>46,640,954</u>	<u>45,379,447</u>
Refunds to Terminated Employees	<u>853,221</u>	<u>844,031</u>
Administrative Expenses		
Depreciation	3,164	3,355
Other (See Page 46)	<u>704,768</u>	<u>718,185</u>
Total Administrative Expenses	<u>707,932</u>	<u>721,540</u>
Total Deductions	<u>48,202,107</u>	<u>46,945,018</u>
NET CHANGE IN FIDUCIARY NET POSITION	19,291,111	44,675,431
NET POSITION RESTRICTED FOR PENSION BENEFITS		
AT BEGINNING OF YEAR	<u>571,296,862</u>	<u>526,621,431</u>
NET POSITION RESTRICTED FOR PENSION BENEFITS		
AT END OF YEAR	<u>\$ 590,587,973</u>	<u>\$ 571,296,862</u>

****The accompanying notes are an integral part of these financial statements.****

CITY OF KNOXVILLE PENSION SYSTEM

NOTES TO FINANCIAL STATEMENTS

June 30, 2018 and 2017

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

(a) *Reporting Entity*

The City of Knoxville Pension System (the "System") has separate legal standing and is fiscally independent of the City of Knoxville. However, based upon the criterion of financial accountability as defined by GASB Statement No. 14, *The Financial Reporting Entity*, as amended, the System is considered a part of the City's financial reporting entity and is included in the City's Comprehensive Annual Financial Report (CAFR) as a pension trust fund, a fiduciary fund type.

(b) *Basis of Accounting and Presentation*

The financial statements were prepared using the accrual basis of accounting. Employee and employer contributions are recognized as additions to plan net position in the period in which the employee services are performed and respective contributions are due. Deductions from fiduciary net position are recorded when the corresponding liabilities are incurred according to provisions of the System, regardless of when paid.

(c) *Plan Expenses*

The System's Board acts as the trustee of the System's assets. The operating and other administrative expenses incurred by the Board or its employees in the performance of its duties are paid from the assets of the System, which are accumulated from the contributions and investment earnings.

(d) *Investments*

The System is authorized to invest in eligible investments as approved by the Pension Board as set forth in its investment policy which is approved by City Council. Investments of the System shall be in accordance with all applicable laws of the State of Tennessee, specifically the prudent investor rule as set forth in Tenn. Code Ann. Sec. 35-14-103. The System's investments are held by a bank-administered custodial fund. Investments held by the System are stated at fair value. Many factors are considered in arriving at that fair value and are further explained in Note 5 of the financial statements.

(e) *Investment Income*

Dividend income is recorded on the ex-dividend date and interest income is recorded as earned on an accrual basis. Gains and losses on sales, maturities or exchanges of investments are determined on an average cost basis and are reflected in the statements of changes in fiduciary net position.

NOTE 1 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

(f) *Cash and Cash Equivalents*

Cash and cash equivalents consist of highly liquid investments, including cash held on a temporary basis by the Custodian, money market funds and certificates of deposit. Substantially all cash and cash equivalents are uninsured and uncollateralized; carrying values approximate bank balances. Only investments with maturities of three months or less at the time of purchase are classified as cash equivalents.

(g) *Capital Assets*

Property and equipment are stated at cost, less accumulated depreciation. Depreciation has been provided for using the straight-line method over the estimated useful life of the related asset.

(h) *Use of Estimates*

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates. Significant estimates include fair value of investments and all actuarial calculations.

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM

(a) *General*

The City of Knoxville Pension System (the System) is a single-employer contributory, qualified defined benefit plan established under the City of Knoxville Pension Act of 1935, covering substantially all employees of the City of Knoxville (City), including uniformed bodies (Fire and Police) and employees of the former City of Knoxville Education System (Education). The System is designed to provide retirement, disability and death benefits. Depending on which Division the participant is a member of, participants in the System remain non-vested in the City's contribution and the related earnings thereon until five to ten years of service has been achieved. The City of Knoxville Pension System is a governmental plan as defined by the Employee Retirement Income Security Act (ERISA) of 1974, is not subject to many of the provisions of ERISA, and is exempt from the reporting requirements of the Internal Revenue Service. The Divisions described in Note 2(g) are funded by contributions from the employers and employees in the various City departments and agencies.

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

Management of the System is entrusted to the Pension Board which consists of nine members. Four Board members are elected employee representatives – two from the general government, one from the police department and one from the fire department. The Council of the City of Knoxville elects one member who must be a resident of the City of Knoxville. The Mayor of the City of Knoxville appoints two members who must be residents of the City and have financial or accounting expertise. The Mayor of the City and the City Finance Director are ex-officio members of the Board.

The following description of the System is provided for general informational purposes only. For complete details of the plan, refer to the City of Knoxville Charter Article XIII, Sections 1301 – 1390.

(b) *Financial Statement Presentation*

The System's actuarial valuations are performed annually. The latest available actuarial valuation is as of July 1, 2018, which corresponds to the financial information as of and for the year ended June 30, 2018.

The assets of the System are included in the City's comprehensive annual financial report as a fiduciary pension trust fund. The System receives significant contributions from the City.

(c) *Membership*

At July 1, 2018, the System had approximately 2,023 retirees and beneficiaries currently receiving benefits, 57 employees currently participating in the Delayed Retirement Option Program ("DROP") and 126 deferred vested participants. Of the approximately 1,429 active employees in the System, 1,047 are fully vested and the remaining 382 are not vested.

For comparative purposes, at July 1, 2017, the System had 2,035 retirees and beneficiaries receiving benefits, 54 employees participating in the DROP and 109 deferred vested participants. Of the 1,481 active employees, 1,113 were fully vested and 368 were not vested.

(d) *Board of Education*

Included in the financial statements are benefit amounts relating to certain former employees of the City of Knoxville Board of Education which was abolished and transferred to Knox County as of July 1, 1987. The City treats these benefit amounts as belonging to a terminated department and makes actuarially determined contributions sufficient to amortize the participants' accrued pension liabilities through July 1, 1987. The Board of Education merger with Knox County Schools is discussed further in Note 3 to the financial statements.

(e) *Employer Contributions*

In accordance to Section 1360.10 of the City Charter, the City's contribution is based on an actuarially determined percentage of the monthly base earnings of the System's participants. The contribution for the former Board of Education department is an actuarially determined amount based on a level dollar amount to fund any actuarial liability.

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

The recommended contributions are determined using the entry age normal funding method. Unfunded actuarial accrued liabilities are being amortized over a thirty year period, of which 19 years remain at July 1, 2018. Projected covered payroll for the year beginning July 1, 2018 amounted to approximately \$72,020,628. The ratio of the net pension liability to the covered payroll was 283.3%.

The contributions for the year ended June 30, 2018 were based on the actuarial calculations as of July 1, 2016. The table below shows the contribution rates as percentages of covered payroll, with comparison to 2017.

<u>Plan</u>	<u>2018</u>	<u>2017</u>
C	17.77%	44.11%
A,B,G	7.39%	20.62%
H (general government)	8.7%	8.91%
H (uniformed)	11.69%	10.36%

In the fiscal year ended in 2018 the City began making payments on the unfunded actuarial accrued liabilities separate from the Normal Cost of benefits based on current payroll, hence the decrease in the contribution rate percentages above. The amortization payments made, by Plan, are as show here:

<u>Plan</u>	<u>2018</u>	<u>2017</u>
C	\$10,135,000	-
A,B,G (general government)	\$ 4,370,000	-
A,B (education)	\$ 1,972,000	\$ 1,718,943

In addition to these actuarially determined contributions, the City of Knoxville contributes 1.5% of the monthly base earnings of participants in Division G, Option 1 to defined contribution accounts held within the System. Contributions to this plan for the fiscal years ended June 30, 2018 and 2017 were \$143,076 and \$171,604, respectively.

(f) *Plan Termination*

No provision has been made for the System’s termination and the resulting order of allocation of benefits if termination should occur. The Pension Benefit Guaranty Corporation does not insure the System.

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

(g) Description of Divisions Comprising the System

DIVISION A

Employees covered

- Substantially all civil service employees hired after 1/15/1963 and before 1/1/1997, who did not elect Division G
- At their option, certain elected officials and appointed employees
- Those Division B members who elected to transfer to Division A
- Any teacher employed by the City between 1/16/1963 (or prior if that teacher elected to transfer from Division B) and 12/31/1976
- Those Division A uniformed body employees who did not elect Division C

Employees excluded

- Teachers hired by the City after 12/31/1976 (they participate in Tennessee Consolidated Retirement System). All City employees hired after December 31, 1996 (now in Division G).

Employee contributions

- 3% of the first \$4,800 of annual earnings and 5% of annual earnings in excess of \$4,800

Normal retirement age and required creditable service

- Age 62

Normal retirement benefit

- The normal retirement benefit for life will be equal to one-twelfth of the product of (a) and (b) below:
 - (a) Credited service (in years, completed months and days)
 - (b) X% of average base earnings, plus Y% of average excess earnings as follows:

<u>Age at Retirement</u>	<u>X%</u>	<u>Y%</u>
62 or earlier	0.75	1.50
63	0.78	1.58
64	0.83	1.66
65 or older	0.88	1.76

Base earning are annual earnings up to \$4,800. Excess earnings are annual earnings over \$4,800. Average is defined as the highest average earnings over a span of two years (for general government) or three years (for education).

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

(g) Description of Divisions Comprising the System (Continued)

DIVISION A (continued)

- | | |
|--------------------|--|
| Benefit adjustment | <ul style="list-style-type: none">• Cost of living adjustment (COLA) is applied annually on January 1<ol style="list-style-type: none">1. Education members retired on or before 7/1/1987 and General Government members receive an increase of 3% based on the prior year's benefit. If member is over 62 an additional increase of ½ of the excess by which the percentage increase in the CPI exceeds 3% is awarded. The total COLA may not exceed 4%.2. Education members retired after 7/1/1987 and receiving a benefit for the preceding 12 months receive an increase/decrease based on the percent increase/decrease in the CPI not to exceed 3%. If member is over age 62 an additional increase of ½ of the excess by which the percentage increase in the CPI exceeds 3% is awarded. The total COLA may not exceed 4%. |
| Other | <ul style="list-style-type: none">• Members of Division A are covered by Social Security• Division is closed to new members |

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

(g) Description of Divisions Comprising the System (Continued)

DIVISION B

Employees covered	<ul style="list-style-type: none">• All employees, except uniformed police and fire personnel, who were employed prior to 1/17/1963, and who participated in the City of Knoxville Pension System as created by the City of Knoxville Pension Act of 1935, who elected to continue in Division B and were not over age 40 when electing to contribute.
Employees excluded	<ul style="list-style-type: none">• Members of the Tennessee Consolidated Retirement System
Employee contributions	<ul style="list-style-type: none">• 4% of annual earnings• Annual earnings referred to above excludes overtime payments
Normal retirement age and required creditable service	<ul style="list-style-type: none">• Age 50, 25 years of service
Normal retirement benefit	<ul style="list-style-type: none">• The immediate monthly pension is 50% of the member's average monthly salary for the highest two years. To this percentage will be added 1% of each year (and fraction based on complete months) of service worked after 1/1/79, and after the member has reached age 50 and completed 25 years of service, subject to a maximum addition of 10%.
Benefit adjustment	<ul style="list-style-type: none">• Cost of living adjustment (COLA) is applied annually on January 1 for members receiving a benefit for the preceding 12 months. The COLA is an increase of 3% based on the prior year's benefit. If member is over 62 an additional increase of ½ of the excess by which the percentage increase in the CPI exceeds 3% is awarded. The total COLA may not exceed 4%.
Other	<ul style="list-style-type: none">• Members of Division B are not covered by Social Security• Division is closed to new members• Members remain non-vested in the City's contribution and the related earnings thereon until ten years of service has been completed, at which time the participant vests fully

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

(g) *Description of Divisions Comprising the System (Continued)*

DIVISION C

- | | |
|---|---|
| Employees covered | <ul style="list-style-type: none">• All uniformed fire and police personnel employed after 1/2/1971 and before 1/1/2013• Members who transferred from Division A on 1/2/1971 |
| Employees excluded | <ul style="list-style-type: none">• Members who elected to remain in Division A |
| Employee contributions | <ul style="list-style-type: none">• 6% of annual earnings (subject to a maximum of 30 years)• Annual earnings referred to above excludes overtime payments• Member contributions were limited to the 30-year maximum referred to above effective 1/1/1997 |
| Normal retirement age and required creditable service | <ul style="list-style-type: none">• Age 50, 25 years of service |
| Normal retirement benefit | <ul style="list-style-type: none">• The normal monthly retirement benefit payable for life is as follows:<ul style="list-style-type: none">2.0% of member's average salary for each year of service, subject to a maximum of 30 years of service until 1/4/19972.1% of member's average salary for each year of service, subject to a maximum of 30 years of service until 1/4/19992.4% of member's average salary for each year of service, subject to a maximum of 30 years of service until 1/5/2001, and 2.5% of member's average salary thereafter <p>Average salary is determined over three years until 1/4/1997, two years thereafter.</p> <p>Creditable service was defined in terms of whole years until 1/6/2001, in terms of whole years and whole months until 10/3/2004, and in terms of whole years, whole months and completed days thereafter.</p> |

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

(g) *Description of Divisions Comprising the System (Continued)*

DIVISION C (continued)

- | | |
|--------------------|---|
| Benefit adjustment | <ul style="list-style-type: none">• Cost of living adjustment (COLA) is applied annually on January 1 for members receiving a benefit for the preceding 12 months. The COLA is an increase of 3% based on the prior year's benefit. If member is over 62 an additional increase of ½ of the excess by which the percentage increase in the CPI exceeds 3% is awarded. The total COLA may not exceed 4%. |
| Other | <ul style="list-style-type: none">• Members of Division C are covered by Social Security• Delayed Retirement Option Program ("DROP")• Members remain non-vested in the City's contribution and the related earnings thereon until five years of service has been completed, at which time the participant vests fully• Division is closed to new members |

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

(g) *Description of Divisions Comprising the System (Continued)*

DIVISION F

Employees covered	<ul style="list-style-type: none">• Fire and police personnel hired before January 1, 1963
Employees excluded	<ul style="list-style-type: none">• Fire and police personnel hired after December 31, 1962
Employee contributions	<ul style="list-style-type: none">• 5% of monthly earnings
Normal retirement age and required creditable service	<ul style="list-style-type: none">• Age 50, 25 years of service
Normal retirement benefit	<ul style="list-style-type: none">• 50% of the member's highest monthly salary while employed in an eligible position. To this percentage will be added 2% for each year of service worked after 25 years to a maximum of 30 years (maximum of 60% benefit).
Benefit adjustment	<ul style="list-style-type: none">• Cost of living adjustment (COLA) is applied annually on January 1. The increase will be the greater of 6% of the original benefit or 4% of the prior year's benefit.
Other	<ul style="list-style-type: none">• Members of Division F are not covered by Social Security• Division is closed to new members

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

(g) *Description of Divisions Comprising the System (Continued)*

DIVISION G

- Employees covered
- All general government employees who were employed on or after January 1, 1997 and before January 1, 2013 after completion of six months service
 - All general government employees who elected to transfer from Division A on July 1, 1997
 - Elected members of the legislative and judicial branches of City Government before January 1, 2013

- Employees excluded
- Members of Division A who elected not to transfer
 - Members of Divisions B, C and F

- Employee contributions
- 6% of annual earnings (Option 1 - 3% defined benefit, 3% supplemental defined contribution; Option 2 - 6% defined benefit)
 - Annual earnings referred to above excludes overtime payments

- Normal retirement age and required creditable service
- Age 62 or "Rule of 80" (member's age plus years of service)

Normal retirement benefit

Option 1

- The monthly normal retirement benefit for life will be equal to one-twelfth of the product of (a) and (b) below:
 - (a) Credited service (in years and completed months and days) times:

<u>Age at Retirement</u>	<u>% of Average Annual Earnings</u>	
	<u>Through 1/5/2001</u>	<u>Thereafter</u>
62 or less	1.07%	1.15%
63	1.12	1.21
64	1.18	1.27
65 or older	1.25	1.35

- (b) Average annual earnings – Average is determined by using the two highest 12 month periods. Periods do not have to be consecutive and any month may be used in only one period.

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

(g) *Description of Divisions Comprising the System (Continued)*

DIVISION G (continued)

(In addition to the above-defined benefit, 3% of the member contributions are going into a supplemental retirement account. The City is contributing 1-1/2% of gross regular bi-weekly payroll into this account. At retirement, the member is entitled to the value of this account.)

Option 2

- Credited service (in years and completed months and days) times 2% of average annual earnings (until 1/5/2001) as defined above.
- 2.1 % of average annual earnings thereafter

Benefit adjustment

- Cost of living adjustment (COLA) is applied annually on January 1. The COLA is an increase of 3% based on the prior year's benefit. If member is over 62 an additional increase of ½ of the excess by which the percentage increase in the CPI exceeds 3% is awarded. The total COLA may not exceed 4%. Members receiving benefits for less than the preceding 12 months will have the COLA prorated based on the number of months benefits were received.

Other

- Members of Division G are covered by Social Security
- DROP
- Members remain non-vested in the City's contribution and the related earnings thereon until five years of service has been completed, at which time the participant vests fully
- Division is closed to new members

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

(g) Description of Divisions Comprising the System (Continued)

DIVISION H

- Employees covered • All general government and uniformed safety employees who were employed on or after January 1, 2013
- Employees excluded • Members of Divisions A, B, C, F and G
- Employee contributions • 6% of annual earnings
 • Annual earnings referred to above excludes overtime payments
- Normal retirement age and required creditable service • General Government: Age 63 and ten years of service
 • Uniformed Safety: Age 56 and twenty-five years of service or age 63 and ten years of service
- Normal retirement benefit • The monthly normal retirement benefit for life will be equal to one-twelfth of the greater of (a) or (b) below:
 - (a) 2% for each year of service times average compensation
 Average is determined by using the five highest 12 month periods. Periods do not have to be consecutive and any month may be used in only one period.
 - (b) The annuity value of the member's hypothetical account which includes:
 - Member's contributions
 - Employer contribution credit equal to 8% of member's compensation for general government and 10% for uniformed safety, and
 - Interest credit based on the change in market value of the fund
- Benefit adjustment • Cost of living adjustment (COLA) is applied annually on January 1 to the prior year's benefit amount. Members receiving benefits for less than the preceding 12 months will have the COLA prorated based on the number of months benefits were received. The COLA is calculated by multiplying the increase in the CPI (up to 3%) by the funding factor shown in the following table:

<u>Division H funded percentage</u>	<u>COLA funding factor</u>
Greater than or equal to 95%	100%
Greater than or equal to 80% but less than 95%	50%
Greater than or equal to 60% but less than 80%	25%
Less than 60%	0%

NOTE 2 - DESCRIPTION OF THE CITY OF KNOXVILLE PENSION SYSTEM (Continued)

(g) *Description of Divisions Comprising the System (Continued)*

DIVISION H (continued)

Other

- Members of Division H are covered by Social Security
- Members remain non-vested in the City's contribution and the related earnings thereon until ten years of service has been completed, at which time the participant vests fully

* * * * *

Adjustments of employee contributions rates and benefit terms included in Note 2(g) above require amendments to the Charter of the City of Knoxville through a vote of the citizens of the City.

NOTE 3 - ABOLISHMENT OF THE CITY SCHOOL SYSTEM

Effective July 1, 1987, the City School System, whose employees were members of the Board of Education department, was abolished and the former City school operations were absorbed into those of Knox County. Although there has not been an actual plan termination, the City's abolishment of its school system and a Court of Appeals ruling has resulted in an in-substance termination of the Board of Education department of the Pension Board.

Pension benefits for non-certified employees of the former City Schools are projected based on the salaries received and to be received from the Knox County Board of Education, as well as the estimated retirement dates for such personnel. Under the terms of the City of Knoxville Charter as construed by the Pension Board, the City is responsible for the difference in the total benefits due non-certified personnel had they remained in the System and amounts payable to such personnel under the Knox County retirement plan. The pension benefit obligation for certified personnel is calculated on a termination basis as of July 1, 1987. Under the terms of an agreement with Knox County executed November 7, 1994, the City is responsible for funding the benefits earned by certified personnel through July 1, 1987. Knox County is responsible for funding the difference, if any, between the pension benefits due based on the employee's salary and service at July 1, 1987, and the actual pension obligation when the employee retires.

The System's actuary has determined the actuarial value of pension benefits which former City school system employees would be entitled to if their earned benefits were frozen at July 1, 1987. The excess of this amount over the fair value of System's assets allocated to the Board of Education is being amortized by City contributions to the System. The City made contributions for this department of \$1,972,000 and \$1,718,943 for the years ended June 30, 2018 and 2017, respectively.

NOTE 4 - DELAYED RETIREMENT OPTION PROGRAM

When applicable, a member who is eligible for a normal retirement benefit may elect a delayed retirement through participation in the Delayed Retirement Option Program (DROP). The delayed retirement date may be no more than 24 months after the election is effective. A member will no longer be permitted to make contributions to the pension system once the DROP is elected.

A member's retirement benefit entitlement is computed when the member makes the DROP election and neither additional service nor increased salaries will affect this entitlement. The accumulated benefits in the DROP at the delayed retirement date are payable in a one-time payment in the month following the delayed retirement date. The member has the option to rollover all or part of this one-time payment to another eligible tax-deferred arrangement. The member's regular monthly benefit which was established at the member's election to participate in the DROP will also begin in the month following the delayed retirement date. Any cost of living adjustments for which the member is eligible during the member's DROP participation period will increase the monthly benefit entitlement established at the time of the member's election to participate in the DROP.

On June 30, 2018 there were 57 members on the DROP and the balance of accumulated benefits was \$1,732,541. On June 30, 2017 there were 54 members on the DROP and the balance of accumulated benefits was \$1,857,611.

NOTE 5 – INVESTMENTS AT FAIR VALUE

City Charter section 1350.2(B) requires a Statement of Investment Policy be adopted by the System, which can be amended by the Board by a majority vote of its members. It is the policy of the Board to pursue an investment strategy that reduces risk through diversification of the portfolio across a broad selection of asset classes. Liquidity is required only to meet defined payout needs, and as such, each investment manager's portfolio is to be fully invested notwithstanding the brief period of time between a sale and reinvestment. The following is the Board's broad asset allocation policy which was adopted in September 2017:

<u>Asset Class</u>	<u>Target Allocation</u>
Equity	45.5%
Fixed Income	26.0%
Hedge Funds	5.0%
Risk Parity	5.0%
Real Assets	17.5%
Cash	1.0%

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

Purchases and sales of securities, including gain or loss on sales or exchanges, are recorded on a trade-date basis. Discounts and premiums on fixed income securities are included in net appreciation in the fair value of investments. The effect on the financial statements of not amortizing discounts and premiums is considered immaterial.

As a retirement defined benefit pension fund, the System holds significant amount of investments that are measured at fair value on a recurring basis. Investing is a key part of the System's activities. The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The framework for measuring fair value provides a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices for identical assets in active markets that can be accessed at the measurement date (Level 1) and the lowest priority to unobservable inputs (Level 3).

The three levels of the fair value hierarchy under GASB 72 are described as follows:

- **Level 1** – Inputs are quoted prices (unadjusted) for identical assets or liabilities in active markets that a government can access at the measurement date.
- **Level 2** – Inputs include quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in inactive markets; inputs other than quoted priced that are observable for the asset or liability like interest rates and yield curves observable at commonly quoted intervals, implied volatilities, or credit spreads; inputs that are derived principally from or corroborated by observable market data by correlation or other means. If the asset or liability has a specified term, the level 2 must be observable for substantially the full term of the asset or liability.
- **Level 3** – Inputs are unobservable and significant to the fair value measurement.

The asset or liability'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 used need to maximize the use of relevant observable inputs and minimize the use of unobservable inputs.

Descriptions of the valuation methodologies used for each category of investment measured at fair value are listed below as they appear in the fair value table.

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

The System has the following recurring fair value measurements as of June 30, 2018:

	Fair Value Measurements Using			
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	
Investments by Fair Value Level				
Debt Securities:				
U.S. Treasury Securities	\$ 43,152,329	\$ 43,152,329	\$ -	\$ -
U.S. Government Backed Securities	1,970,730	1,970,730	-	-
Commercial Mortgage-Backed Securities	2,908,072	-	2,908,072	-
Asset Backed Securities	2,898,125	-	2,898,125	-
Residential Mortgage-Backed Securities	12,135,605	-	12,135,605	-
Corporate Bonds	39,658,264	39,658,264	-	-
Municipal Bonds	1,175,944	1,175,944	-	-
TIPS	19,252,347	19,252,347	-	-
Mutual Funds:				
U.S. Aggregate Bond Index	21,406,352	21,406,352	-	-
Total Debt Securities	144,557,768	126,615,966	17,941,802	-
Equity Securities:				
Consumer Discretionary	20,649,696	20,649,696	-	-
Consumer Staples	479,755	479,755	-	-
Energy	6,243,861	6,243,861	-	-
Financials	18,370,219	18,370,219	-	-
Healthcare	6,180,941	6,180,941	-	-
Industrials	4,655,107	4,655,107	-	-
Information Technology	14,507,258	14,507,258	-	-
Materials	1,905,319	1,905,319	-	-
Reit Financials	1,969,066	1,969,066	-	-
Telecommunications Services	287,708	287,708	-	-
Utilities	884,533	884,533	-	-
Mutual Funds:				
Large Cap Growth	47,921,587	47,921,587	-	-
Total Equity Securities	124,055,050	124,055,050	-	-

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

Fair value measurements as of June 30, 2018 (continued):

		Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Private Equity:				
Debt	5,509,564	-	-	5,509,564
Diversified	4,916,279	-	-	4,916,279
Energy	10,553,903	-	-	10,553,903
International	3,066,226	-	-	3,066,226
Secondary Markets	6,333,639	-	-	6,333,639
Venture Capital	5,392,866	-	-	5,392,866
Total Private Equity	<u>35,772,477</u>	-	-	<u>35,772,477</u>
Total Investments by fair value level	<u>304,385,295</u>	<u>\$ 250,671,016</u>	<u>\$ 17,941,802</u>	<u>\$ 35,772,477</u>

Investments measured at the net asset value (NAV)

Multi-strategy Hedge Fund	14,341,706
Real Estate Funds	48,009,580
International Equities	125,493,122
Master Limited Partnerships	27,464,938
Defensive Equity	25,257,721
Risk Parity	<u>38,950,837</u>
Total investment measured at the NAV	<u>279,517,904</u>
Total investments measured at fair value	583,903,199
Cash held by money managers	<u>7,224,994</u>
Total Investment Assets	<u>\$ 591,128,193</u> ⁽¹⁾

⁽¹⁾ - Total investment assets presented in the fair value table include pending items and accruals.

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

The System had the following recurring fair value measurements as of June 30, 2017:

	Fair Value Measurements Using			
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by Fair Value Level				
Debt Securities:				
U.S. Treasury Securities	\$ 28,052,771	\$ 28,052,771	\$ -	\$ -
U.S. Government Backed Securities	2,174,734	2,174,734	-	-
Commercial Mortgage-Backed Securities	2,920,695	-	2,920,695	-
Asset Backed Securities	2,568,412	-	2,568,412	-
Residential Mortgage-Backed Securities	8,564,032	-	8,564,032	-
Corporate Bonds	62,120,803	34,236,406	27,884,397	-
Municipal Bonds	1,175,666	1,175,666	-	-
TIPS	12,597,263	12,597,263	-	-
Mutual Funds:				
Global Fixed Income	15,787,288	-	15,787,288	-
Total Debt Securities	135,961,664	78,236,840	57,724,824	-
Equity Securities:				
Consumer Discretionary	15,286,551	15,286,551	-	-
Consumer Staples	2,790,954	2,790,954	-	-
Energy	3,577,963	3,577,963	-	-
Financials	19,745,197	19,745,197	-	-
Healthcare	6,067,051	6,067,051	-	-
Industrials	3,486,088	3,486,088	-	-
Information Technology	15,519,058	15,519,058	-	-
Materials	2,857,444	2,857,444	-	-
Reit Financials	1,718,511	1,718,511	-	-
Telecommunications Services	798,693	798,693	-	-
Utilities	827,306	827,306	-	-
Mutual Funds:				
Large Cap Growth	43,366,213	43,366,213	-	-
Total Equity Securities	116,041,029	116,041,029	-	-

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

Fair value measurements as of June 30, 2017 (continued):

		Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Private Equity:				
Debt	4,321,213	-	-	4,321,213
Diversified	3,303,047	-	-	3,303,047
Energy	11,598,673	-	-	11,598,673
International	1,920,850	-	-	1,920,850
Secondary Markets	3,921,011	-	-	3,921,011
Venture Capital	4,023,827	-	-	4,023,827
Total Private Equity	29,088,621	-	-	29,088,621
Total Investments by fair value level	281,091,314	\$ 194,277,869	\$ 57,724,824	\$ 29,088,621

Investments measured at the net asset value (NAV)

Multi-strategy Hedge Fund	13,618,670
Real Estate Funds	45,284,634
International Equities	132,702,091
Master Limited Partnerships	26,454,149
Risk Parity	36,812,129
International - Emerging Market Debt	24,599,332
Total investment measured at the NAV	279,471,005
Total investments measured at fair value	560,562,319
Cash held by money managers	11,307,993
Total Investment Assets	\$ 571,870,312 ⁽¹⁾

⁽¹⁾ - Total investment assets presented in the fair value table include pending items and accruals.

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

Debt Securities – Actively traded debt instruments such as those securities issued by the U.S. Treasury, Federal Agencies and most corporate issuers are reported at fair value as of the close of the trading date. Fair values in irregular traded debt securities are obtained from pricing vendors who employ modeling techniques in determining security values. Inputs typically employed by pricing vendors include cash flows, maturity and credit rating. Corporate bonds, mortgage-backed securities and asset-backed securities classified as Level 2 are valued based on yields currently available on comparable securities of issuers with similar credit ratings.

Equities – Equities held by the System consist of domestic, international and global securities, including those traded in emerging markets and are actively traded on major security exchanges or over-the-counter. Fair value for exchange traded securities is determined as of the close of the trading date in the primary market or agreed upon exchange. The last known price is used for listed securities that did not trade on a particular date. Fair value is obtained from third party pricing sources for securities trade over-the-counter.

Mutual Funds – Equities mutual funds are valued at the daily closing price as reported by the fund. Mutual funds held by the System are open-end mutual funds that are registered with the SEC. These funds are required to publish their daily net asset value and to transact at the price. These mutual funds are deemed to be actively traded.

Private Equities – The fair value of the System’s various private equities depends upon the nature of the investment and the underlying business. Typically, the alternative investments are less liquid and subject to redemption restrictions explained further in the next section. Fair value is determined quarterly either with valuations conducted by general partners, management and/or valuation specialists. Valuation techniques vary by investment type and involve significant expert judgment.

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

Investments Measured at the NAV as of June 30, 2018:

	Fair Value	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Multi-strategy Hedge Fund	\$ 14,341,706	\$ -	Semi-annual	95 days
Real Estate Funds	48,009,580	-	Quarterly, Daily	45 days, 1 day
International Equities	125,493,122	-	Monthly	10 - 30 days
Master Limited Partnerships	27,464,938	-	Daily	3 days
Defensive Equity	25,257,721	-	Monthly	5 days
Risk Parity	38,950,837	-	Monthly	3 days
Total investment measured at the NAV	<u>\$ 279,517,904</u>	<u>\$ -</u>		
Private Equity:				
Debt	\$ 5,509,564	\$ 3,975,000		
Diversified	4,916,279	5,019,320		
Energy	10,553,903	1,372,921		
International	3,066,226	2,185,421		
Secondary Markets	6,333,639	5,635,000		
Venture Capital	5,392,866	312,616		
Total Private Equity	<u>\$ 35,772,477</u>	<u>\$ 18,500,278</u>		

Investments Measured at the NAV as of June 30, 2017:

	Fair Value	Unfunded Commitments	Redemption Frequency (if Currently Eligible)	Redemption Notice Period
Multi-strategy Hedge Fund	\$ 13,618,670	\$ -	Semi-annual	95 days
Real Estate Funds	45,284,634	-	Quarterly, Daily	45 days, 1 day
International Equities	132,702,091	-	Monthly	10 - 30 days
Master Limited Partnerships	26,454,149	-	Daily	3 days
Risk Parity	36,812,129	-	Monthly	3 days
International - Emerging Market Debt	24,599,332	-	Monthly	3 days
Total investment measured at the NAV	<u>\$ 279,471,005</u>	<u>\$ -</u>		
Private Equity:				
Debt	\$ 4,321,213	\$ 5,350,000		
Diversified	3,303,047	554,200		
Energy	11,598,673	1,861,196		
International	1,920,850	3,208,083		
Secondary Markets	3,921,011	7,835,000		
Venture Capital	4,023,827	906,807		
Total Private Equity	<u>\$ 29,088,621</u>	<u>\$ 19,715,286</u>		

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

Multi-Strategy Hedge Fund – The System has one manager which is a fund of funds that invests in several dozen hedge fund strategies where each underlying hedge fund strategy can have varying focus or investment style. Fair values of the portfolios determined using the NAV per share and are adjusted monthly, but fully reevaluated semi-annually. Proceeds from the fund can only be drawn at the semi-annual valuation. The goal of this investment is to provide growth to the portfolio that is uncorrelated to traditional stock and bond investing.

Real Estate – This type includes two managers that invest in commercial real estate properties across the United States. The System's investment managers will look to buy entire properties in hopes of improving their overall offering, increasing both its rental income and ultimate selling price. Depending on the particular investment fund, fair values of the portfolios are determined either daily or quarterly and proceeds are only able to be added or withdrawn at this time. The fair value of real estate investments, principally rental property subject to long-term leases has been estimated on the basis of future rental receipts and estimated residual values discounted at interest rates commensurate with the risks involved. The goal of these investments is to provide a high degree of yield from rental incomes and some growth from capital appreciation.

International equities – This type of investment consists of three managers that invest in non-U.S. publicly-traded companies. Each investment manager will have its own individual restrictions on countries and industry sectors they are allowed to invest in as well as permissible size of each investment. Fair values of the portfolios are determined each month using the NAV per share of the investment, and proceeds are only able to be added or withdrawn at this time. The goal of these investments is to provide growth for the portfolio as well as diversification away from the United States.

Master Limited Partnerships – This investment type consists of one manager that invests in publicly-traded companies that own infrastructure that is used to transport various energy products across the U.S. These companies set long-term contracts with energy producers/extractors and charge based on volume of energy that passes through their infrastructure. Fair value of this portfolio is determined daily using the NAV per share of the investment subject to long-term contract values as estimated on the basis of future expected production and estimated residual values discounted at interest rates commensurate with the risks involved. The goal of these investments is to provide growth and a diversification away from many aspects of the traditional economic cycle.

Risk Parity – This investment type consists of one manager and is broken down into three components- stocks, bonds, and inflation. It invests in different securities for each segment and sizes each security in a way that the manager believes will give the overall portfolio approximately equal exposure to each segment. The key is not an equal allocation weight to each segment but an allocation where each segment's performance should have an equal effect on overall portfolio performance. Fair values of the portfolios are determined each month using the NAV per share (or its equivalent) of the investment, and proceeds are only able to be added or withdrawn at this time. The goal of this investment is to provide growth to the portfolio by diversification from the traditional stock and bond investing.

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

Defensive Equity – This investment type consists of one manager and provides exposure to the U.S. large cap equity space while aiming to provide downside market protection to the portfolio as well as incorporating a differentiated source of returns (insurance risk premium “IRP”) than in the broad equity universe. The portfolio is invested 50% in the S&P 500 index and 50% in Treasury Bills. The strategy will also sell out-of-the-money put and call options on the S&P 500. Options are financial insurance contracts, and like all insurance contracts, they are not free and the pricing tends to favor the sellers. Overpricing in these contracts represents IRP paid by option buyers to option sellers. S&P 500 Index options have historically been overpriced, resulting in a differentiated (and persistent) source of return to the investors in this strategy. Expected returns for this strategy are equal to (50% X S&P 500 Return) + (50% X T-Bill Return) + (100% X IRP). Fair values of the portfolios are determined each month using the NAV per share (or its equivalent) of the investment, and proceeds are only able to be added or withdrawn at this time. The goal of this investment is to provide growth to the portfolio with significantly less volatility than traditional equity exposure.

Emerging Market Debt – This type of investment consists of one manager who invests in both government and corporate bonds issued in emerging market countries. These issues tend to have lower credit quality than their counterparts in the U.S. and developed world, so these securities typically offer a higher premium and interest rate. The System also has exposure to the emerging market country currencies through these investments. Fair values of the portfolios are determined each month using the NAV per share (or its equivalent) of the investment, and proceeds are only able to be added or withdrawn at this time. The goal of these investments is to provide growth from higher yields for the portfolio as well as diversification away from the United States.

RATE OF RETURN - The annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 6.32% and 12.10% for the fiscal years ended 2018 and 2017 respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

For the years ended June 30, 2018 and 2017, net appreciation (depreciation), including realized gains and losses, associated with the System’s investments were as follows:

	2018	2017
Government Securities	\$ (1,401,726)	\$ (1,164,638)
Foreign Securities	10,149,294	28,317,900
Corporate Bonds and Debentures	(2,645,717)	353,953
Real Assets	390,786	2,977,174
Alternative Assets	2,861,919	2,020,790
Domestic Equity Securities	23,483,488	25,419,971
	<u>\$ 32,838,044</u>	<u>\$ 57,925,150</u>

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

INTEREST RATE RISK - Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment or a deposit. Duration is a measure of a debt investment’s exposure to fair value changes arising from changing interest rates based upon the present value of cash flows, weighted for those cash flows as a percentage of the investment’s full price. At June 30, the System’s exposure to interest rate risk as measured by the weighted average maturity by investment category is listed in the following table:

	2018		2017	
	Fair Value (including pending items & accruals)	Weighted Average Maturity (Years)	Fair Value (including pending items & accruals)	Weighted Average Maturity (Years)
Fixed Income type				
Core Bonds	\$ 67,861,461	8.13	\$ 38,092,036	8.52
Long Bonds	59,749,153	25.25	41,714,362	24.88
High-Yield Bonds	-	-	29,155,625	6.72
Treasury Inflation Protection Securities	19,323,226	5.33	12,613,564	5.47
Emerging Markets Debt	11,843	-	24,599,332	7.90
Global Bonds	-	-	15,787,288	7.85

Descriptions for each category of the System’s fixed income investment portfolio are listed below as they appear in the weighted average maturity table. The City of Knoxville Pension System has an approved investment policy which targets the combined fixed income portfolios at 26%. The investment policy permits portfolios of fixed income investments to go up to 75% of the total investment value of the fund. As of June 30, 2018, these portfolios were 24.86% of the total investment value. In accordance with the investment policy, interest rate sensitivity of collateralized mortgage obligations cannot be greater than the underlying mortgage backed security.

Core Bonds – consist of a combination of U.S. Treasury, municipal bonds, investment grade corporate bonds which contain various corporate sectors, mortgage backed securities both corporate and government backed, and asset backed securities.

Long Bonds – consist of longer term investments in various core bond products.

High-Yield Bonds – covers corporate issuers that do not hold an investment grade (BBB- or higher) rating.

Treasury Inflation Protection Securities (“TIPS”) – are made up of public obligations of the U.S. Treasury that are adjusted for inflation.

Emerging Markets Debt – consist of sovereign issuers from emerging market countries, with the debt denominated in either the local currency of the issuer (local currency, typically benchmarked against the JPM GBI-EM GD) or U.S. Dollar denominated (hard currency, typically benchmarked against the JPM EMBI GD).

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

Global Bonds – consist of a combination of U.S. bonds and Non-U.S. bonds in both government and corporate bond in various sectors.

CREDIT RISK – Credit risk is the risk that an issuer or other counterparty to an investment will default or will otherwise not fulfill its obligations.

The System’s investment policy mandates a diversified investment portfolio among several asset classes. The policy further requires general adherence to the prudent person rule for the investments within that classification to have an overall credit rating of investment grade or better. Occasionally, the System’s investment managers notify the System of an investment that has been downgraded below investment grade, but the manager must provide a plan for holding or disposition and report the status regularly to the Board through the Investment Committee.

The System’s exposure to credit risk at June 30, 2018 is presented below, in thousands, by investment category as rated by S&P or Moody’s Investment Service:

Bond Type	AAA/		A/A	BBB/		B/B	CCC/ Caa	Not Rated or Rating Not Available	Total
	Aaa	AA/Aa		Baa	BB/Ba				
Commercial Mortgage- backed securities	\$ 3,252	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 659	\$ 3,911
Asset-Backed Securities	1,780	-	-	-	-	-	-	2,923	4,703
Corporate Bonds	922	3,203	12,076	21,037	1,034	-	-	1,688	39,960
Municipal Bonds	-	805	167	-	-	-	-	151	1,123
TIPS	19,252	-	-	-	-	-	-	-	19,252
Total Fixed Income									
Securities Exposed to Credit Risk	<u>\$ 25,206</u>	<u>\$ 4,008</u>	<u>\$ 12,243</u>	<u>\$ 21,037</u>	<u>\$ 1,034</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 5,421</u>	<u>\$ 68,949</u>
Percentage of total Fixed Income Portfolio	<u>17.2%</u>	<u>2.7%</u>	<u>8.3%</u>	<u>14.3%</u>	<u>0.7%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>3.7%</u>	<u>46.9%</u>

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

The System’s exposure to credit risk at June 30, 2017 is presented below, in thousands, by investment category as rated by S&P or Moody’s Investor Service:

Bond Type	AAA/ Aaa	AA/Aa	A/A	BBB/ Baa	BB/Ba	B/B	CCC/ Caa	Not Rated or Rating Not Available	Total
Commercial Mortgage- backed securities	\$ 2,804	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 742	\$ 3,546
Asset-Backed Securities	1,707	-	-	-	-	-	-	2,874	4,581
Corporate Bonds	841	2,596	10,873	19,366	7,647	16,111	2,244	1,653	61,331
Municipal Bonds	-	381	389	-	-	-	-	356	1,126
TIPS	12,569	-	-	-	-	-	-	-	12,569
Total Fixed Income									
Securities Exposed to Credit Risk	\$ 17,921	\$ 2,977	\$ 11,262	\$ 19,366	\$ 7,647	\$ 16,111	\$ 2,244	\$ 5,625	\$ 83,153
Percentage of total Fixed Income Portfolio	11.1%	1.8%	7.0%	12.0%	4.7%	9.9%	1.4%	3.5%	51.3%

The System held debt investments in the form of mutual funds for the years ended June 30, 2018 and 2017. The System owned shares of the mutual fund’s investments in aggregate and does not own shares of the underlying individual assets. The mutual funds are currently unrated.

CONCENTRATION OF CREDIT RISK - Investment with any one issuer shall not exceed 5%, except for obligations of the U. S. Government. As of June 30, 2018, the only non U.S. Government investments greater than the 5% of the total investment value of the fund were fully-diversified commingled funds/pooled funds/mutual funds.

Investments by money manager that represent 5% or more of the System’s net position are as follows:

June 30, 2018:

Silchester International Investors	\$ 70,548,785
Income Research & Management	65,778,334
Schroder Investment Management	59,749,153
Eagle Capital Management LLC	47,256,998
Northern Trust Investments R1000	46,664,826
PanAgora Asset Management	38,950,837
Acadian Asset Management, LLC	35,399,083
Tortoise Capital Advisors	31,643,205

NOTE 5 – INVESTMENTS AT FAIR VALUE (Continued)

June 30, 2017:

Silchester International Investors	\$ 73,567,134
Income Research & Management	50,705,599
Eagle Capital Management LLC	46,002,397
Northern Trust Investments R1000	43,366,213
Schroder Investment Management	41,714,362
Acadian Asset Management, LLC	39,500,285
PanAgora Asset Management	36,812,129
Penn Capital Management	29,155,625
Tortoise Capital Advisors	28,848,594

CUSTODIAL CREDIT RISK – Deposits – In the case of bank deposits, this is the risk that in the event of a bank failure, the System’s deposits may not be returned to it. As required by state statutes, the System’s policy is to require that financial institutions holding its deposits to be members of the Tennessee Collateral Pool or pledge collateral for deposits exceeding federal depository insurance. Collateral is required to be held by the System or its agent in the System’s name. At June 30, 2018, the System’s bank balance of \$1,548 was not exposed to custodial credit risk.

FOREIGN CURRENCY RISK – Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or deposit. All investments of the System are denominated in U.S. dollars. International equity investment is done via fully diversified open-ended commingled funds.

NOTE 6 – OTHER INCOME

Other income consists of the following:

	<u>2018</u>	<u>2017</u>
Securities litigation income	\$ 359,636	\$ 163,000
Commission recapture income	<u>3,134</u>	<u>2,107</u>
	<u>\$ 362,770</u>	<u>\$ 165,107</u>

NOTE 7 – CAPITAL ASSETS

Capital asset activity for years ended June 30, 2018 and 2017 was as follows:

	<u>Beginning Balance</u>	<u>Additions</u>	<u>Deletions</u>	<u>Ending Balance</u>
June 30, 2018:				
Depreciable Furniture & Equipment	\$ 33,804	\$ -	\$ (4,915)	\$ 28,889
Accumulated Depreciation				
Furniture & Equipment, net	<u>(27,749)</u>	<u>(3,164)</u>	<u>4,915</u>	<u>(25,998)</u>
	<u>\$ 6,055</u>	<u>\$ (3,164)</u>	<u>\$ -</u>	<u>\$ 2,891</u>
June 30, 2017:				
Depreciable Furniture & Equipment	\$ 32,673	\$ 1,131	\$ -	\$ 33,804
Accumulated Depreciation				
Furniture & Equipment, net	<u>(24,394)</u>	<u>(3,355)</u>	<u>-</u>	<u>(27,749)</u>
	<u>\$ 8,279</u>	<u>\$ (2,224)</u>	<u>\$ -</u>	<u>\$ 6,055</u>

NOTE 8 – NET PENSION LIABILITY OF THE CITY

The components of the net pension liability at June 30 were as follows:

	<u>2018</u>	<u>2017</u>
Total pension liability	\$ 794,638,156	\$ 775,877,041
Plan fiduciary net position	<u>(590,587,973)</u>	<u>(571,296,862)</u>
Net pension liability	<u>\$ 204,050,183</u>	<u>\$ 204,580,179</u>

Plan fiduciary net position as a percentage of the total pension	74.32%	73.63%
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NOTE 9 – ACTUARIAL METHODS AND ASSUMPTIONS

Actuarial Assumptions: The actuarial assumptions used in the July 1, 2018 valuation were based on the results of an actuarial experience study for the period July 1, 2011 through July 1, 2016. This experience study led to changes in the mortality tables used for all non-Division H groups, adjustments to the salary scales, and an investment return assumption change. Further details on the changes in assumptions can be found in the Actuarial Section of this report.

Significant actuarial assumptions used in the valuation as of July 1, 2018 include:

- (a) Plan H rate of return on investment of present and future assets of 5.5% per annum, based on a 2.5% inflation assumption; 0.5% expense assumption. All other plans' rate of return on investment of present and futures assets of 7.25% per annum, based on a 2.5% inflation assumption; 0.5% expense assumption.
- (b) The assumed salary scale is based on a review of the experience study of the plan, the assumed salary increases are greater at younger ages and lower at older ages.
- (c) Projected postretirement benefit (COLA) increases of 3.0% annually for Plan H and 3.5% annually for all other plans.
- (d) Actuarial valuation method is entry age normal with the unfunded liability amortized over a closed period; 19 years remaining.
- (e) Discount Rate is 5.5% for Division H and 7.25% for all others.

NOTE 9 – ACTUARIAL METHODS AND ASSUMPTIONS (Continued)

The salary scale assumption mentioned in (b) above is based on the experience study shown below:

	<u>General Government</u>	<u>Uniformed Bodies</u>
Age 20	11.3%	11.3%
Age 25	6.2%	7.6%
Age 30	5.2%	6.3%
Age 35	4.7%	5.6%
Age 40	4.2%	4.9%
Age 45	3.9%	4.3%
Age 50	3.6%	3.8%
Age 55	3.3%	3.3%
Age 60	3.0%	3.0%

The actuarial value of assets was determined using techniques that smooth the effect of short-term volatility in the market value of equities over a ten-year period but which limits the actuarial value to between 80% and 120% of the market value. The projection of benefits is based on benefit levels and cost-sharing arrangements as of the date of the valuation and do not explicitly reflect the potential effects of legal or contractual funding limitations.

Mortality rates for General Government (not including Board of Education) and Uniformed Bodies were based on 110% of the RP-2000 Healthy Annuitant static table rates. Board of Education mortality rates are based on the 2016 PPA Annuitant static table.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

NOTE 9 – ACTUARIAL METHODS AND ASSUMPTIONS (Continued)

Best estimates of geometric real rates of return for each major class included in the System’s target asset allocation as of June 30, 2018 (see the discussion of the System’s investment policy in the Investment Section) are summarized in the following table:

	30-Year Expected Nominal Return*	30-Year Expected Real Return
Large Cap Stocks	6.75%	4.25%
Small-Mid Cap Stocks	7.50%	5.00%
Developed International Stocks	7.50%	5.00%
Emerging Markets Stocks	9.00%	6.50%
Emerging Markets Debt	7.00%	4.50%
Non-core Real Estate	8.25%	5.75%
MLPs	8.75%	6.25%
Private Energy	10.25%	7.75%
Private Equity	10.25%	7.75%
Growth Hedge Funds	7.25%	4.75%
Risk Parity	8.25%	5.75%
Defensive Equity	6.75%	4.25%
Cash	3.50%	1.00%
Core Fixed Income	4.00%	1.50%
Core Plus Fixed Income	4.50%	2.00%
Core Real Estate	6.25%	3.75%
TIPS	3.75%	1.25%

*Includes 2.5% Inflation

Discount Rate: The discount rate used to measure the total pension liability on the first basis is equal to the System’s expected rate of return of 7.25%. Per Tenn. Code Ann. §9-3-504(e)(5), the expected rate of return cannot exceed 50 basis over the rate adopted by the Tennessee Consolidated Retirement System which, as of June 30, 2017, was 7.5%. Prior to July 1, 2017, the System’s expected rate of return was 7.375%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current statutory contribution rates and that contributions from the City will be made at the current statutory contributions rates. Based on those assumptions, the System’s net position is expected to be available indefinitely. Accordingly, the discount rate is equal to the expected long-term rate of return on assets and does not include a component of the municipal bond rate. The long-term expected rate of return on pension plan investments was applied to periods of projected benefit payments. The System has historically earned over 7.3% for the past twenty years on a rolling average rate of return which includes the financial crisis of 2008-2009.

NOTE 9 – ACTUARIAL METHODS AND ASSUMPTIONS (Continued)

Sensitivity of the net pension liability to changes in the discount rate: The following presents the net pension liability of the City, calculated using the discount rate of 7.25%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25%) or 1-percentage-point higher (8.25%) than the current rate:

	1% Decrease (6.25%)*	Current Discount Rate (7.25%)*	1% Increase (8.25%)*
Net Pension Liability at June 30, 2018	\$ 296,623,282	\$ 204,050,183	\$ 126,653,642

	1% Decrease (6.25%)*	Current Discount Rate (7.25%)*	1% Increase (8.25%)*
Net Pension Liability at June 30, 2017	\$ 295,242,832	\$ 204,580,179	\$ 128,800,971

*For Division H, the current rate is 5.5%; 1% Decrease is 4.5% and 1% Increase is 6.5%.

NOTE 10 – CONTINGENCIES

The System is subject to potential litigation and other legal proceeding arising in the ordinary course of business. In the opinion of management, in consultation with legal counsel, there is no present litigation that would have a material impact on the financial condition of the System. Accordingly, no provision has been made within the accompanying financial statements.

NOTE 11 – SUBSEQUENT EVENTS

On October 15, 2018 the investment consultant relationship with Summit Strategies was terminated. An interim agreement has been assigned to AndCo Consulting to provide services to the System from that date until such time as the request for proposal (“RFP”) process is complete and a new investment consultant is hired.

Michael Paseur was removed from the Board upon his termination of employment with the City in August 2018 to accept another position at Knox County, Tennessee. He was replaced in September 2018 by Alex Neubert through the general election process.

The City Council representative on the Board was changed effective October 2018 from Finbarr Saunders to Stephanie Welch.

CITY OF KNOXVILLE PENSION SYSTEM
Required Supplementary Information

June 30, 2018

Schedule of Changes in the Net Pension Liability and Related Ratios
(Dollar amounts in millions)

	Fiscal Year ended June 30									
	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>
Total Pension Liability						**	**	**	**	**
Service cost	\$ 13.0	\$ 13.1	\$ 13.1	\$ 12.6	\$ 12.3					
Interest	55.1	52.5	51.8	50.9	49.4					
Changes of benefit terms	-	-	-	-	-					
Differences between expected and actual experience	(1.9)	(3.7)	2.1	(6.1)	0.9					
Changes in assumptions	-	21.0	-	-	-					
Benefit payments/refunds	<u>(47.5)</u>	<u>(46.2)</u>	<u>(44.7)</u>	<u>(43.5)</u>	<u>(42.3)</u>					
Net Change in Total Pension Liability	18.7	36.7	22.3	13.9	20.3					
Total Pension Liability - Beginning	<u>775.9</u>	<u>739.2</u>	<u>716.9</u>	<u>703.0</u>	<u>682.7</u>					
Total Pension Liability - Ending (a)	<u>\$ 794.6</u>	<u>\$ 775.9</u>	<u>\$ 739.2</u>	<u>\$ 716.9</u>	<u>\$ 703.0</u>					
Plan Fiduciary Net Position										
Contributions - employer	\$ 25.7	\$ 23.8	\$ 23.9	22.6	15.2					
Contributions - employee	4.2	4.4	4.4	4.1	4.0					
Net investment income	37.6	63.3	(1.0)	7.9	87.1					
Benefit payments/refunds	(47.5)	(46.2)	(44.7)	(43.5)	(42.3)					
Administrative expenses	(0.7)	(0.7)	(0.7)	(0.7)	(0.8)					
Other	-	-	-	-	-					
Net Change in Plan Fiduciary Net Position	\$ 19.3	\$ 44.6	\$ (18.1)	(9.6)	63.2					
Plan Fiduciary Net Position - Beginning	<u>571.3</u>	<u>526.7</u>	<u>544.8</u>	<u>554.4</u>	<u>491.2</u>					
Plan Fiduciary Net Position - Ending (b)	<u>\$ 590.6</u>	<u>\$ 571.3</u>	<u>\$ 526.7</u>	<u>\$ 544.8</u>	<u>554.4</u>					
City's Net Pension Liability - ending (a) - (b)	<u>\$ 204.0</u>	<u>\$ 204.6</u>	<u>\$ 212.5</u>	<u>\$ 172.1</u>	<u>148.6</u>					
Plan Fiduciary Net Position as a % of the Total Pension Liability	74.3%	73.6%	71.3%	76.0%	78.9%					
Covered payroll	\$ 72.0	\$ 72.6	\$ 71.5	\$ 71.0	\$ 69.9					
Net Pension Liability as a % of covered payroll	283.3%	281.8%	297.4%	242.4%	212.6%					

The net pension liability reported in 2015 includes the benefit of the City's contributions held in reserve. The net pension liability as calculated by the actuary in the July 1, 2015 actuarial valuation was \$174.1 million and did not include the \$2.0 million held in reserve. In 2016, the \$2.0 million was applied back to the Market Value of Assets leaving no credit balance.

**Only five years of complete data is available for this schedule as 2014 was the first year this information was calculated.

See Summary of Actuarial Assumptions and Methods in the Actuarial Section of the report for details regarding methods and assumptions used.

CITY OF KNOXVILLE PENSION SYSTEM
Required Supplementary Information
June 30, 2018

Schedule of Employer Contributions
(Dollar amounts in millions)

	Fiscal Year ended June 30									
	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>
Actuarially determined contribution	\$25.7	\$23.8	\$23.9	\$22.6	\$20.9	\$13.4	\$11.4	\$ 9.3	\$ 7.4	\$ 6.9
Contributions in relation to the actuarially determined contribution	<u>25.7</u>	<u>23.8</u>	<u>23.9</u>	<u>22.6</u>	<u>20.9</u>	<u>13.5</u>	<u>11.5</u>	<u>9.2</u>	<u>7.4</u>	<u>6.9</u>
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (0.1)</u>	<u>\$ (0.1)</u>	<u>\$ 0.1</u>	<u>\$ -</u>	<u>\$ -</u>
Covered payroll	\$72.0	\$72.6	\$71.5	\$71.0	\$69.9	\$67.8	\$65.4	\$64.3	\$63.9	\$60.6
Contributions as a percentage of covered payroll	35.7%	32.8%	33.4%	31.8%	29.9%	19.9%	17.6%	14.3%	11.6%	11.4%

See Summary of Actuarial Assumptions and Methods in the Actuarial Section of the report for details regarding methods and assumptions used to determine contribution rates.

CITY OF KNOXVILLE PENSION SYSTEM
Required Supplementary Information
 June 30, 2018

Schedule of Investment Returns

	Fiscal Year ended June 30									
	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>
Annual money-weighted rate of return, net of investment expense	6.32%	12.10%	-0.11%	1.52%	18.24%	**	**	**	**	**

**Only five years of complete data is available for this schedule as 2014 was the first year this information was calculated.

CITY OF KNOXVILLE PENSION SYSTEM

Supporting Schedules

For the Year Ended June 30, 2018

Schedule of Administrative Expenses

Depreciation		<u>\$ 3,164</u>
Other Administrative Expenses:		
Personnel Expenses		\$ 406,054
Professional Services		
Actuarial	\$ 74,729	
Audit	30,000	
Legal	53,181	
Medical Consultants	713	
Benefit Payments	<u>36,865</u>	
<i>Total Professional Services</i>		195,488
Miscellaneous Expenses		
Computer Software and Support	\$ 6,879	
Copier Maintenance and Lease	3,743	
Dues & Subscriptions	2,798	
Insurance	68,560	
Internet and Website	3,571	
Mass Mailings	1,721	
Office Maintenance	2,639	
Office Supplies	3,430	
Printing and Publications	1,358	
Professional Development	2,337	
Travel	<u>6,190</u>	
<i>Total Miscellaneous Expenses</i>		<u>103,226</u>
Total Other Administrative Expenses:		<u>704,768</u>
Total Administrative Expenses		<u>\$ 707,932</u>

See independent auditor's report.

CITY OF KNOXVILLE PENSION SYSTEM
Supporting Schedules
For the Year Ended June 30, 2018

Schedule of Investment Expenses

Consultant Services	\$ 160,000
Custodial Fees	132,000
Investment Manager Fees	<u>3,575,064</u>
<i>Total Investment Expenses</i>	<u><u>\$3,867,064</u></u>

The Schedule of Fees and Commissions on pages 57-59 in the Investment Section details all investment services.

See independent auditor's report.

INVESTMENT SECTION



October 12, 2018

To the Board of Trustees of the
City of Knoxville Employees' Pension System

Introduction

This report, prepared for the City of Knoxville Employees' Pension System (System) by Summit Strategies Group (Summit) is based on information supplied by the System's custodian, Northern Trust Company (Northern). Northern holds assets in safe-keeping for the System, regularly values the assets for the System, and provides Summit with beginning and ending market values, cash flows, securities transactions and positions for the System as well as each manager, where applicable. Where System assets are invested in pooled investment vehicles, such as mutual funds or commingled trusts, third-party custodians for the pooled investment vehicles provide Northern net asset values and the System's audited financial statements for those investments. The custodian audits the information contained in its monthly accounting reports. Summit uses Northern's monthly accounting reports to calculate investment returns for the System and its Board of Trustees.

Distinction of Responsibilities

The System's Board of Trustees (Trustees) is responsible for the investment and administration of System assets. This includes establishing the strategic asset allocation that, over time, is the primary determinant of investment return on assets. A thorough understanding of both the System's assets and liabilities is essential for determining an appropriate asset allocation. The key drivers of this analysis are the projections of the System's liabilities and the projections of expected future returns and risk for each asset class, as well as correlation between asset classes. The liabilities include all key dimensions of the System's pension plan: membership, benefits, liabilities, assets, and funding requirements. Summit previously presented an Asset-Liability Study to the Trustees at which time the Trustees adopted a strategic target asset allocation. Subsequent to that time, Summit has regularly reviewed target asset allocation and expected asset class returns with the Trustees, with the Trustees modifying the target allocation as necessary. The target long-term asset allocation in place at fiscal year-end 2018 was last amended in September 2017 and is shown on the next page.

Investment Policy/Structure

The asset allocation adopted by the Trustees is included in the System's Statement of Investment Policy (Investment Policy). The System employs various investment managers to implement the asset allocation within the guidelines and limitations contained in the Investment Policy. System assets are invested using numerous investment managers so as to diversify the System's assets among multiple asset classes, investment styles, and investment strategies. Each investment manager is delegated full investment discretion for its respective portfolio including the discretion to purchase, hold and sell individual securities and control industry and economic sector exposure within certain managers' geographic exposure.

The System's Investment Policy is designed to provide broad diversification among asset classes and investment strategies in order to maximize return at an appropriate level of risk and to minimize the risk of large losses to the System. In addition, asset allocation ranges, target allocations, and a process of periodic rebalancing are used to maintain compliance with the Investment Policy and to increase the likelihood that the System will achieve its long-term risk and return objectives.

To the Board of Trustees of the
City of Knoxville Employees' Pension System

The following table outlines the System's long-term target asset allocation, as of June 30, 2018:

Asset Class	Allocation Target
Domestic Equity	22.0%
International Equity	18.5%
Private Equity	5.0%
Fixed Income	26.0%
Hedge Funds	5.0%
Risk Parity	5.0%
Real Estate	10.0%
Energy/Natural Resources	7.5%
Cash	1.0%
Total Portfolio	100%

Within each asset class, the Trustees may employ several investment managers to further diversify the investment approach and to minimize style biases. The Trustees may employ both active and passive investment strategies to obtain the desired asset allocation mix in a cost effective and efficient manner.

Investment Objectives

The System's Investment Policy contains the following objectives:

1. To provide, over the life of the System's pension fund, an adequate level of assets available to fund benefits at the time they are payable;
2. To earn a total rate of investment return on System assets, after all expenses, which equals/exceeds the actuarial investment return assumption over the long term;

In addition, one of the investment goals contained in the Investment Policy is for the System's assets to achieve an investment return, net of expenses, which meets/exceeds a Policy Index. The Policy Index is constructed of the returns of the various broad market benchmarks representing the asset classes in which the System's assets are invested and weighted to reflect the System's target asset allocation.

The Policy Index was constructed as follows (as of June 30, 2018): 23% Russell 3000 Index, 4% S&P 500 Index, 18.5% MSCI ACWI ex-US Index, 21% Bloomberg Barclays Aggregate Index, 5% JPM GBI-EM Global Diversified Index, 5% 60% MSCI World/40% Citigroup WGBI, 17.5% NCREIF-ODCE Index, 5% HFRI FoF Composite Index, 1% 90-Day Treasury Bills.

In addition, the System's investment performance is evaluated relative to the Public Plan Universe of the BNY Mellon US Trust Universe; a universe of all public pension plans representing the performance of 459 public pension plans as of June 30, 2018. Finally, each investment manager is measured and evaluated against its relevant broad market index and style peer universe.

Market Overview

Investors saw global economic markets continue to show strong expansion for the period of July 1, 2017 to June 30, 2018, with global GDP growth remaining above recent trend. Investment market returns overall were positive for the 12-month period as global stocks (MSCI ACWI IMI) returned +11.1%, however market and portfolio performance were quite different in the last half of calendar year 2017 compared to the first half of 2018. 2017 was characterized by continued rising growth and positive economic data reports, capping one of the strongest years for the global economy since the 2008-2009 financial crisis. Rising corporate sales and earnings growth, high consumer and business confidence, and ongoing central bank accommodation pushed global equity indices to new all-time highs. The MSCI ACWI IMI Index extended its streak of consecutive monthly gains to 14 in December, the longest since the inception of the Index in 1994. For the first time in its history, the S&P 500 did not have a negative monthly return for an entire year, yet during 2017, international markets still outperformed US for the first time in five years, supported by their strengthening fundamentals. For the last six months of 2017, US stocks (Russell 3000) returned +11.2%, international developed stocks (MSCI EAFE) returned +9.9%, and international emerging markets (MSCI EM) returned +15.9%. As economic progress continued to improve in 2018, trade news entered the discussion in the new calendar year and became a primary source of equity market fluctuations. Economic reports during the first two quarters of 2018 indicated the global expansion remains intact, with growth accelerating. However, trade tensions have continued to make headlines, with the US announcing tariffs on billions of Chinese goods and China retaliating in-kind. While the tariffs currently implemented make up a small percentage of US imports and GDP, financial markets have been focused on trade developments and appear to be pricing a continuation of tensions, particularly in international markets. Following 2017, which saw global equities gain each month amid record low volatility, market swings returned toward more normal levels in 2018. MSCI ACWI IMI was basically flat during the first six months of the year with calendar year-to-date loss for the Index at -0.2%. Much of this loss has come from the international markets, which is a reverse of themes from 2017. For the first six months of 2018, Russell 3000 returned +3.2%, MSCI EAFE returned -2.4%, and MSCI EM returned -6.7%. In the fixed income environment, the further progress in the US labor market and overall economy prompted the Federal Reserve to raise short-term interest rates by 25 basis points three separate times over last twelve months. This put downward pressures on current bond prices, and the Blmbg. Barc. US Aggregate returned -0.4% for the one year period ending June 30, 2018.

Overall, July 1, 2017 through June 30, 2018 was a period of strong economic activity and continued growth in the global corporate sector. This dynamic led to strong equity returns, which certainly benefitted the System. Summit believes the ability to capitalize on this strong return environment while still providing diversification away from traditional stocks and bonds as market prices do experience short term volatility will be a significant benefit to the System going forward.

Investment Performance

Summit calculates and reports all returns in accordance with Global Investment Performance Standards (GIPS). As an investment consultant, Summit is prohibited from stating that investment performance is shown "in compliance with" or "in accordance with" GIPS, as GIPS compliance is reserved solely for use by investment management firms. However, Summit strives to uphold and maintain the guiding principles underlying GIPS standards, both ethically and in its performance calculation methodology. Accordingly, all performance returns are calculated using a time-weighted methodology known as the Modified Dietz method. This algorithm attempts to eliminate the effects of cash flows and geometrically links period returns.

The total return for the fiscal year ending June 30, 2018, on all assets was 7.0%, which ranked in the 84th percentile of the peer universe, All Public Plans-Total Fund in the BNY Mellon US Trust Universe. Note: the lower the percentile number, the better (i.e., 1st percentile = best; 100th percentile = worst). The System's Investment Policy calls for

To the Board of Trustees of the
City of Knoxville Employees' Pension System

measuring performance for the total portfolio over longer periods. Accordingly, the System's assets have compounded at annual rates of return of 6.7% and 8.0% for the last three and five years, ranking in the 60th and 59th percentiles for those periods, respectively. Over the trailing 10-year period, the System returned 7.0% on an annualized basis and ranked in the 44th percentile of its public plan peer universe.

The System's assets produced a positive absolute return for the fiscal year, as all of the asset class composites except fixed income (Equity, Real Assets, Hedge Funds, and Risk Parity) earned positive returns. The System underperformed its Policy Index return by 0.3% for the fiscal year, primarily due to MLPs. The System's MLPs returned -1.3% for the year while the MLP benchmark is not in the Policy Index. Rather, MLPs are benchmarked to the Real Estate index which returned 8.4% for the year. The System's US Equity, International Equity, Fixed Income and Hedge Fund composites all outperformed their respective benchmarks for the year.

The market value of all assets was \$590.2 million on June 30, 2018, compared to \$571.3 million on June 30, 2017. Despite withdrawals for benefit payments being made during the fiscal year, the market value of the Plan increased by almost \$19 million. At the end of fiscal year 2018, the System's assets were allocated as follows:

	Market Value (\$ in millions)	Percent of Total	Fiscal Year Rate of Return	
			System	Benchmark
Domestic Equity	\$114.9	24.5%	15.6%	14.8%
International Equity	\$125.5	21.3%	7.5%	7.3%
Fixed Income	\$146.9	24.9%	-0.2%	-0.4%
Hedge Funds	\$13.6	2.4%	8.1%	6.4%
Real Assets	\$90.5	15.3%	3.8%	8.4%
Private Equity	\$24.0	4.1%	N/A	N/A
Risk Parity	\$39.0	6.6%	5.8%	7.8%
Cash	\$5.0	0.9%	1.7%	N/A
Total	\$590.2	100.0%	7.0%	7.3%

It has been a pleasure serving the System and working with its Staff and Trustees. I know the Board and Investment Committee will continue their efforts in search for reduced overall risk in the investment portfolio and competitive investment returns during the current economic and capital market environment.

Respectfully submitted,



Phineas W. Troy, CFA
Vice President

CITY OF KNOXVILLE PENSION SYSTEM

Outline of Investment Policies

The *Statement of Investment Policy of the City of Knoxville Employees' Pension System* serves to articulate the Pension Board and its Investment Committee's view of the System's investment objectives and risk tolerance. That document is used to assist the Investment Committee with the development of a suitable asset allocation, the selection of appropriate investment managers or pooled funds within the asset allocation, and the prudent monitoring and evaluation of performance of the plan, selected investment managers and pooled funds. The Statement also defines the roles and responsibilities of persons associated with the System.

Investment Objectives

The primary objective of the System is to ensure, over the long-term life of the System, an adequate level of assets to fund the benefits guaranteed to Plan members and their beneficiaries at the time they are payable. In meeting this objective, the Board seeks to achieve a high level of investment return consistent with a prudent level of portfolio risk.

In addition, a secondary investment objective of the System is to earn a total rate of return after all expenses that equals or exceeds the actuarial investment return assumption. The Board, with help from its actuary and investment consultant, will use the System's asset allocation as the primary tool to achieve this objective. As this is a long-term projection and investments are subject to short-term volatility, the main investment focus of the Board towards the total System's assumed rate of return and that of each investment manager will be on performance relative to the appropriate asset class, mix of asset classes, and peer performance over relevant time periods. Each manager is expected to maintain a consistent philosophy and style, perform well versus others utilizing the same style, and add incremental value after costs.

CITY OF KNOXVILLE PENSION SYSTEM

Investment Performance

Investment returns are calculated using a time-weighted rate of return based on the market value of assets. Returns are reported gross of fees unless otherwise stated. Annualized investment results compared with benchmarks for the year ending June 30, 2018 are as follows:

	<u>1 Year</u>	<u>3 Year</u>	<u>5 Year</u>	<u>10 Year</u>
US Equity	15.56%	12.15%	13.60%	10.51%
Russell 3000 Index	14.78%	11.58%	13.29%	10.23%
International Equity	7.54%	7.42%	8.36%	7.43%
MSCI ACWI-EX US Index	7.28%	5.07%	5.99%	2.37%
Fixed Income	-0.20%	3.17%	3.50%	5.47%
Barclays Capital Aggregate Index	-0.40%	1.72%	2.27%	3.72%
Real Assets	3.81%	4.63%	7.15%	3.84%
NCREIF-ODCE Index	8.44%	9.37%	11.04%	5.29%
Hedge Fund Composite	5.31%	3.75%	4.95%	2.53%
HFRI Fund of Funds Composite Index	5.12%	1.93%	3.45%	1.40%
Risk Parity Composite	5.81%	6.68%	-	-
60% MSCI World/40% Citigroup WGBI	7.77%	6.71%	-	-
Total Portfolio	7.00%	6.69%	7.98%	7.04%
Total Fund Policy Index	7.25%	6.55%	7.66%	5.66%

CITY OF KNOXVILLE PENSION SYSTEM

Asset Allocation

Based on its determination of the appropriate risk posture for the System and its related long-term return expectations, the Board, along with the investment consultant and actuary, will periodically review and establish asset-mix guidelines for the System. The guidelines will be based on market values and shall comply at all times with the authorized limits set by City Council, which are as follows:

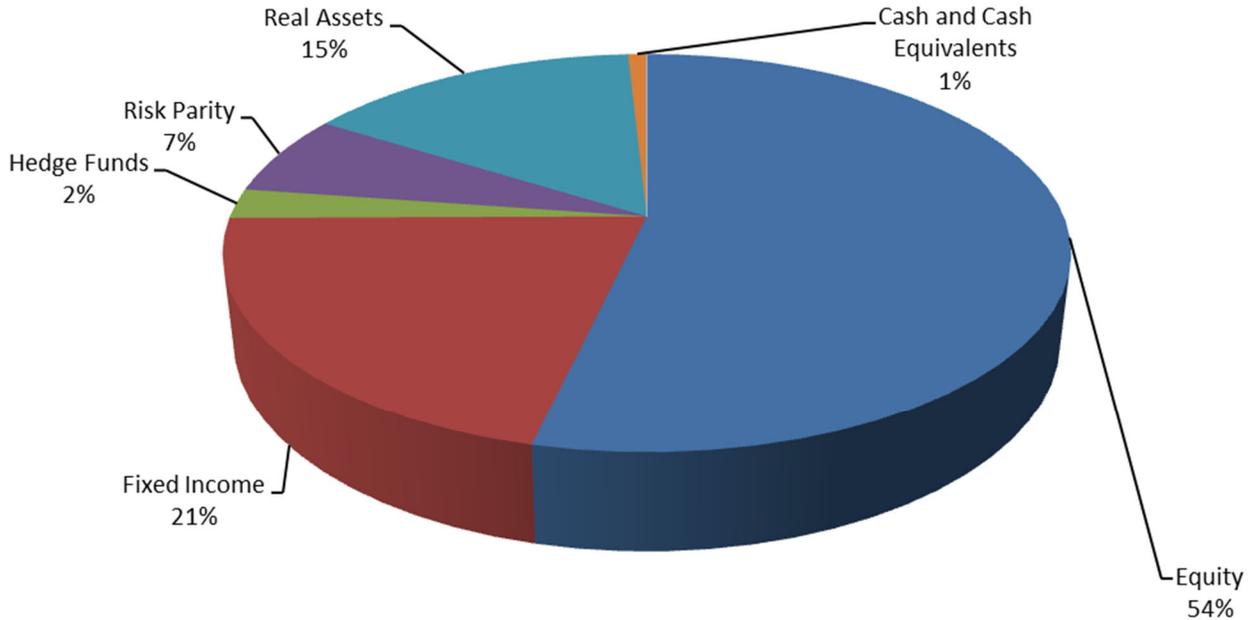
<u>ASSET CLASS</u>	<u>AUTHORIZED LIMITS</u>
Equity	0% - 75%
Fixed Income	0% - 75%
Hedge Funds	0% - 15%
Risk Parity	0% - 15%
Real Assets	0% - 20%
Cash	0% - 10%

The Board recognizes that adherence to an asset allocation plan has the greatest impact on long-term performance results. The risk return profile is maintained by identifying a long-term strategic asset allocation. In May 2017, the asset allocation plan was modified to remove high yield bonds from the mix and include Defensive Equity. In September 2017, the asset allocation plan was amended to eliminate specific allocations to Global Bonds, Core Plus Bonds, Long Bonds, and TIPS and instead combine these asset classes under the heading Core/Core Plus. The goal of these changes is to reduce the risk of volatility and consolidate funds to allow the remaining managers to opportunistically enter and exit these strategies while still attempting to maintain the expected rate of return for the overall System. Temporary deviations from the targets are held within ranges. The allocation targets and acceptable ranges adopted as of September 2017 are as follows:

<u>ASSET CLASS</u>	<u>TARGET ALLOCATION</u>	<u>NORMAL ALLOCATION</u>
Equity	45.5%	40.5% - 50.5%
Large Cap Stocks	14.5%	9.5% - 19.5%
Defensive Equity	4.0%	0% - 8%
Small-Mid Cap Stocks	3.5%	0% - 8.5%
Developed International Stocks	12.5%	7.5% - 17.5%
Emerging Markets Stocks	6%	0% - 11%
Private Equity	5%	0% - 10%
Fixed Income	26%	19% - 33%
Core/Core Plus	21%	15% - 30%
Emerging Markets Debt	5%	0% - 10%
Hedge Funds	5%	0% - 10%
Risk Parity	5%	0% - 10%
Real Assets	17.5%	12.5% - 20%
Real Estate	10%	5% - 15%
Energy/Commodities	7.5%	2.5% - 12.5%
Cash	1%	0% - 5%

CITY OF KNOXVILLE PENSION SYSTEM

The total market value of the System on June 30, 2018 was \$590,587,973, primarily consisting of investments. Those investment assets were allocated as shown in the following chart:



Ten Largest Bond Holdings (by Fair Value)

June 30, 2018

<u>Par Value</u>	<u>Bond</u>	<u>Coupon Rate</u>	<u>Due Date</u>	<u>Fair Value</u>
\$8,224,000	UNITED STATES TREAS BONDS	4.625%	02/15/40	\$ 10,580,955
6,140,100	UNITED STATES TREAS BONDS	4.375%	05/15/40	7,589,511
5,939,000	UNITED STATES TREAS BONDS	3.000%	05/15/47	5,979,157
2,838,100	UNITED STATES TREAS BONDS	2.875%	05/15/43	2,799,098
2,512,000	UNITED STATES TREAS BONDS	2.750%	08/15/47	2,423,049
2,229,000	UNITED STATES TREAS BONDS	0.750%	08/15/19	2,194,532
1,913,900	UNITED STATES TREAS BONDS	3.000%	02/15/47	1,942,350
1,187,000	GOLDMAN SACHS	3.500%	11/16/26	1,123,602
1,178,000	UNITED STATES TREAS BONDS	4.500%	05/15/38	1,466,984
1,099,000	UNITED STATES TREAS NTS	0.264%	01/15/25	1,132,176

A complete listing of portfolio holdings is available upon request from the Pension System office.

CITY OF KNOXVILLE PENSION SYSTEM

Ten Largest Stock Holdings (by Fair Value)

June 30, 2018

<u>Shares</u>	<u>Stock</u>	<u>Fair Value</u>
35,800	MICROSOFT CORP COM	\$3,530,238
2,775	ALPHABET INC CAP STK USD0.001 CL C	3,095,929
109,856	MLP ENTERPRISE PRODS PARTNERS L P COM	3,039,716
16,253	BERKSHIRE HATHAWAY INC-CL B	3,033,622
41,635	MLP MAGELLAN MIDSTREAM PARTNERS LP CO	2,876,146
1,598	AMAZON COM INC COM	2,716,280
63,823	MLP WILLIAMS PARTNERS L P NEW COM	2,590,576
49,050	TWENTY-FIRST CENTY FOX INC CL B	2,416,694
70,555	MLP MPLX LP COM	2,408,748
35,400	CITIGROUP INC COM	2,368,968

A complete listing of portfolio holdings is available upon request from the Pension System office.

CITY OF KNOXVILLE PENSION SYSTEM

Schedule of Investment Commissions June 30, 2018

<u>Broker</u>	<u>Quantity</u> (Units)	<u>Broker</u> Commission	<u>Commission/</u> Share
Abel Noser Corp	177,651	\$ 6,991	\$ 0.03935
Barclays Bank PLC	35,822	554	0.01546
BTIG LLC	3,370	79	0.02356
Canaccord Genuity Inc	852	34	0.04000
Citation Group (The)	41,540	1,940	0.04670
Citigroup Global Markets Inc.	69,043	769	0.01114
Cowen and Company LLC	3,606	156	0.04328
Credit Suisse Securities (USA) LLC	60,697	1,628	0.02683
Deutsche Bank Securities Inc.	749	30	0.04000
Goldman Sachs & Co	24,493	564	0.02303
Instinet LLC	34,016	597	0.01756
Invemed Associates LLC	2,225	111	0.05000
ISI Group Inc.	100,791	807	0.00801
ITG Inc.	31,405	314	0.01000
J.P. Morgan Securities LLC	63,437	682	0.01076
Jefferies LLC	22,452	331	0.01476
Jonestrading Institutional Services LLC	561	16	0.02795
Keefe Bruyette	5,603	157	0.02796
Keybanc Capital Markets Inc.	1,723	34	0.02000
Liquidnet Inc.	192,735	3,858	0.02001
Merrill Lynch, Pierce, Fenner & Smith Inc	142,286	3,101	0.02179
Morgan Stanley & Co LLC	32,668	815	0.02494
Northern Trust Company, The	25,034,949	18,140	0.00072
Oppenheimer & Co Inc	1,348	16	0.01173
Piper Jaffray & Co	3,320	74	0.02214

CITY OF KNOXVILLE PENSION SYSTEM

Schedule of Investment Commissions (Continued) June 30, 2018

<u>Broker</u>	<u>Quantity</u> <u>(Units)</u>	<u>Broker</u> <u>Commission</u>	<u>Commission/</u> <u>Share</u>
Raymond James & Associates Inc	46,550	\$ 2,123	\$ 0.04560
RBC Capital Markets, LLC	24,143	447	0.01852
Robert W Baird & Co Inc.	18,001	560	0.03113
Sanford C Bernstein & Co LLC	22,955	912	0.03972
State Street Global Markets LLC	267	3	0.01000
Stephens Inc	3,058	61	0.02000
Stifel, Nicolaus & Company Inc	6,698	134	0.02000
Strategas Securities LLC	25,875	1,035	0.04000
Suntrust Capital Markets Inc	467	13	0.02814
UBS Securities LLC	153,945	3,416	0.02219
USCA Securities LLC	20,257	203	0.01000
Weeden & Co	4,091	41	0.00995
Wells Fargo Bank Minnesota NA	12,358	93	0.00750

Total recaptured commissions were \$3,134.

CITY OF KNOXVILLE PENSION SYSTEM

Schedule of Investment Fees

June 30, 2018

	<u>Assets Under Management</u> <u>(including Cash & Cash</u>		<u>Equivalents) and Pending Items</u>	<u>Fees</u>
<i>Equity Managers</i>				
57 Stars, LLC	\$	3,066,226	\$	38,400
Aberdeen Asset Management		1,509,328		55,508
Acadian Asset Management		35,399,083		308,983
Adams Street Partners		3,406,951		31,950
Eagle Capital Management		47,256,998		370,317
Fort Washington Investment Advisors		6,333,639		36,372
Gryphon International Investors		19,545,254		156,788
NB Alternatives Advisers		5,509,564		64,752
Northern Trust Investments		46,664,826		17,882
Parametric		25,257,721		75,578
Pinnacle Associates		10,746,940		97,704
Silchester International Investors		70,548,785		548,522
Top Tier Capital Partners		5,392,866		44,941
William Blair & Company		14,973,672		143,230
<i>Total Equity</i>	\$	<u>295,611,852</u>	\$	<u>1,990,927</u>
<i>Fixed Income Managers</i>				
Income Research & Management	\$	65,778,335	\$	119,055
Northern Trust Investments		21,406,352		-
Penn Capital Management		-		4,456
Pictet Asset Management		11,843		172,745
Schroder Investment Management		59,749,153		169,001
Standish		-		11,388
<i>Total Fixed Income</i>	\$	<u>146,945,682</u>	\$	<u>476,645</u>
<i>Hedge Fund Managers</i>				
Blackstone Alternative Assets	\$	14,341,706	\$	177,252
<i>Total Hedge Fund</i>	\$	<u>14,341,706</u>	\$	<u>177,252</u>
<i>Risk Parity</i>				
PanAgora Asset Management	\$	38,950,837	\$	135,838
<i>Total Risk Parity</i>	\$	<u>38,950,837</u>	\$	<u>135,838</u>
<i>Real Asset Managers</i>				
Aether Investment Partners	\$	10,553,903	\$	121,479
Principal Global Investors		20,986,404		201,759
RREEF		27,023,175		249,314
Tortoise Capital Advisors		31,643,205		221,850
<i>Total Real Assets</i>	\$	<u>90,206,688</u>	\$	<u>794,402</u>
Total Investment Manager Fees			\$	<u><u>3,575,064</u></u>
Other Investment Service Fees				
Custody Fees - Northern Trust				\$132,000
Consultant Fees - Summit Strategies				\$160,000

This schedule does not include certain investment manager fees which are not practical to separate from net appreciation in fair value of investments.

CITY OF KNOXVILLE PENSION SYSTEM

Schedule of Investment Summary June 30, 2018

Investment Type	Fair Value	Percentage of Portfolio
United States Government Securities		
US Treasuries	\$ 62,397,458	10.57%
US Government Agencies	32,659,483	5.53%
Total US Government Securities	95,056,941	16.10%
State and Municipal Government Securities	1,123,228	0.19%
Corporate Bonds & Debentures		
Corporate Bonds	33,878,313	5.74%
Asset Backed Securities	4,703,976	0.80%
Collateralized Mortgage Obligations	3,910,194	0.66%
Total Corporate Bonds & Debentures	42,492,483	7.20%
Equity Securities	163,148,015	27.63%
International Securities		
Equity Securities	131,926,428	22.34%
Corporate Bonds	7,088,692	1.20%
Total International Securities	139,015,120	23.55%
Alternative Assets	53,292,543	9.03%
Real Assets	89,470,031	15.15%
Cash and Cash Equivalents	6,821,386	1.16%
Total Investment Assets	\$ 590,419,747	100.00%

ACTUARIAL SECTION

October 1, 2018

Ms. Kristi Paczkowski
Executive Director
City of Knoxville Pension Board
917B E. Fifth Avenue
Knoxville, TN 37917-7737

Re: **Actuary's Certification Letter**

Dear Kristi:

The purpose of this letter is to certify the actuarial adequacy of contributions being made by the City of Knoxville for the City of Knoxville Pension System and to discuss the approach currently being taken toward meeting the financing objectives of the Plan.

The most recent actuarial valuation completed as of the year ending June 30, 2018 for the City of Knoxville Pension System was performed as of July 1, 2018. Valuations are performed annually. That valuation was based on a set of actuarial assumptions (described in detail in the section headed "Summary of Actuarial Assumptions and Methods ") which was adopted by the Pension Board on the recommendation of the actuary after a study of actual experience during the five-year period ending June 30, 2016. The results of the most recent experience study were applied to the July 1, 2018 valuation.

Effective January 1, 2013, the Pension Plan introduced Division H for new employees. The provisions of each division of the City of Knoxville Pension System are described in detail in the section headed "Summary of Plan Provisions" in the City of Knoxville Pension System Valuation and Report.

Effective July 1, 2013, the Pension Board elected to amortize all unfunded accrued liabilities over the ensuing 24-year period. Liabilities are being amortized over 19 years as of July 1, 2018.

In performing the 2018 valuation, we relied on employee data and asset information provided by the administrative staff of the City of Knoxville Pension System. In the case of employee data, each individual record was audited for reasonableness and internal consistency, although the validity of the information was not traced to source documents. With respect to plan assets, a general review for consistency with the information furnished for prior valuations was performed.

Ms. Kristi Paczkowski
October 1, 2018

Certain tables presented in the Comprehensive Annual Financial Report are derived from the July 1, 2018 actuarial valuation report prepared by Findley, Inc. The tables were prepared by the staff of the City of Knoxville Pension Plan and examined by our firm. These tables include the following –

Required Supplementary Information

- Schedule of Changes in Net Pension Liability and Related Ratios
- Schedule of Employer Contributions
- Schedule of Investment Returns

Actuarial Section

- Summary of Actuarial Assumptions and Methods
- Schedule of Active Member Valuation Data by Section
- Solvency Test
- Analysis of Financial Experience

The 2018 valuation was prepared in accordance with accepted actuarial principles of practice prescribed by the Actuarial Standards Board and the principles of Governmental Accounting Standards Board Statement 67 and 68, including the overall appropriateness of the analysis, assumptions, and results and conforms to appropriate Standards of Practice as promulgated from time to time by the Actuarial Standards Board, which standards form the basis for the actuarial report. The actuarial assumptions and methods used for financial reporting purposes meet the parameters set by the Actuarial Standards of Practice. I am a Member of the American Academy of Actuaries with experience in performing valuations for public retirement systems; all calculations were performed either by me or by other qualified actuaries under my direct supervision.

Based upon the valuation results and the contribution rates adopted by the Pension Board, it is our opinion that the City of Knoxville Pension System continues to fund its liabilities in accordance with standard actuarial principles of advance funding.

Sincerely,

Alan C. Pennington, F.S.A.

Alan C. Pennington, F.S.A.

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CITY OF KNOXVILLE PENSION SYSTEM

Summary of Actuarial Assumptions and Methods

An experience study is performed every five years. Recommended changes to the actuarial assumptions, if any, based upon the experience study are approved by the Pension Board. Actuarial assumptions and methods shown in the supporting schedules were selected by the Pension Board based upon the recommendations of the actuary following the experience study conducted in 2016.

A summary of the plan provisions is contained in Note 2 to the financial sections within the Financial Section of this Comprehensive Annual Financial Report.

Following is a summary of the key actuarial assumptions and methods used in the most recent actuarial valuation dated July 1, 2018. Also shown are the assumptions and methods used prior to July 1, 2017 which would have been used to calculate prior years' data in the schedules shown in the Actuarial Section of this report.

Rate of Investment Return

Effective July 1, 2017

Plan H-5.5% per annum based on a 2.5% inflation assumption; 0.5% expense assumption. All other plans - 7.25% per annum based on a 2.5% inflation assumption; 0.5% expense assumption.

Prior to July 1, 2017

Plan H-5.5% per annum based on a 2.75% inflation assumption; 0.5% expense assumption. All other plans - 7.375% per annum based on a 2.75% inflation assumption; 0.5% expense assumption.

Asset Valuation Method

Market Value, adjusted for 10-year phase-in of each year's difference between actual and expected value. Actuarial value to be no more than 120% and no less than 80% of market value.

Benefit Cost of Living Adjustment

3.5% per annum for all except Division H; 3.0% per annum for Division H.

Actuarial Valuation Method

Entry Age Normal; Unfunded liability will be amortized over a 24 year period beginning July 1, 2013. Current amortization period is 19 years (closed amortization).

Discount Rate

Effective July 1, 2017

Plan H – 5.5% compounded annually; all others 7.25% compounded annually.

Prior to July 1, 2017

Plan H – 5.5% compounded annually; all others 7.375% compounded annually.

CITY OF KNOXVILLE PENSION SYSTEM

Summary of Actuarial Assumptions and Methods (Continued)

The City of Knoxville is responsible to establish and maintain the funding policy for the System with City Council approval.

An independent “level three” actuarial review was performed by Acuff & Associates for the July 1, 2014 actuarial valuation report prepared by the System’s actuary, Findley (formerly BPS&M). The City established an actuarial audit policy that will require an independent actuarial review for the actuarial valuation report as part of the funding policy procedures at least once in a ten year period. The report by Acuff & Associates, dated January 2, 2015, examined the actuarial methods and assumptions utilized by Findley for reasonableness and internal consistency as described in Actuarial Audits Best Practices issued by GFOA. The review procedures performed indicated that the actuarial methods and assumptions employed by Findley appeared reasonable and internally consistent with prior year reports.

CITY OF KNOXVILLE PENSION SYSTEM

Summary of Actuarial Assumptions and Methods (Continued)

Pre and Post-Retirement Mortality Rates

Effective July 1, 2017

Divisions A, B, C, F, G and H (not including Board of Education) are based on the standard 110% of the RP-2000 Healthy Annuitant static table rates. Board of Education mortality rates are based on the 2016 PPA Annuitant static table.

Prior to July 1, 2017

Post-Retirement Mortality Tables (per 1,000 Lives)

Divisions A, B and G (not including Board of Education)

GA-51 Male Projected to 1980 (5 year setback for Females)

	<u>20</u>	<u>35</u>	<u>50</u>	<u>60</u>
Male	0.43	0.95	4.50	10.80
Female	0.37	0.69	2.49	7.25

Divisions A, and B (Board of Education)

RP-2000

	<u>20</u>	<u>35</u>	<u>50</u>	<u>60</u>
Male	0.35	0.77	2.14	4.88
Female	0.19	0.48	1.68	3.93

Divisions C, F and H (Uniformed Bodies)

25% GA-51 Male Projected to 1980/75% 1971 Group Annuity Mortality

	<u>20</u>	<u>35</u>	<u>50</u>	<u>60</u>
Male	0.48	1.08	5.09	12.54
Female	0.29	0.66	2.24	5.93

Division H (General Government)

1994 GAM – Male only

	<u>20</u>	<u>35</u>	<u>50</u>	<u>60</u>
	0.51	0.85	2.58	7.98

CITY OF KNOXVILLE PENSION SYSTEM
Summary of Actuarial Assumptions and Methods (Continued)

Rate of Normal Retirement

Divisions A and B

<u>Age</u>	<u>Percent Retiring</u>	<u>Age</u>	<u>Percent Retiring</u>
53	2%	62	35%
54	2%	63	10%
55	2%	64	5%
56	3%	65	8%
57	3%	66	5%
58	5%	67	2%
59	5%	68	2%
60	5%	69	1%
61	5%	70	0%

Division C: 20% retire at each age beginning with age 50 and 25 years of Credited Service, but in no event later than age 60.

Division G: 12.5% retire at each age once the rule of 80 is met from age 50 to age 61
 25% retire at each age from 62 to 69
 100% retire by age 70

Division H - General Government:
 25% retire at each age from 63 to 69
 100% retire by age 70

Division H - Uniformed Bodies:
 40% retire at age 56 and 25 years of service
 20% retire at each age from 57 to 62 with 25 years of service
 100% retire by age 63

CITY OF KNOXVILLE PENSION SYSTEM
Summary of Actuarial Assumptions and Methods (Continued)

Withdrawal Rates

Estimated Experience (1st Year Select)

<u>20</u>	<u>35</u>	<u>50</u>	<u>60</u>
17.1%	16.5%	13.9%	11.0%

Estimated Experience (2nd Year Select)

	<u>20</u>	<u>35</u>	<u>50</u>	<u>60</u>
Division A (Board of Ed.), Division C and Division H (Uniformed)	7.0%	6.9%	6.2%	5.3%
All Others	14.1%	13.7%	12.3%	10.6%

Estimated Experience (Ultimate)

	<u>20</u>	<u>35</u>	<u>50</u>	<u>60</u>
Division A (Board of Ed.)	5.3%	3.0%	1.9%	1.6%
Divisions C and H (Uniformed)	8.1%	3.1%	0.4%	0.0%
All Others	10.3%	6.2%	2.3%	0.0%

CITY OF KNOXVILLE PENSION SYSTEM
Summary of Actuarial Assumptions and Methods (Continued)

Salary Increases

Effective July 1, 2017

Divisions A, B, G, and H (General Government)

<u>Age</u>	<u>Annual Rate of Salary Increase</u>
20	11.3%
35	4.7%
50	3.6%
60	3.0%

Divisions C, F, and H (Uniformed Bodies)

<u>Age</u>	<u>Annual Rate of Salary Increase</u>
20	11.3%
35	5.6%
50	3.8%
60	3.0%

Prior to July 1, 2017

Divisions A, B, G, and H (General Government)

<u>Age</u>	<u>Annual Rate of Salary Increase</u>
20	11.7%
35	5.1%
50	4.1%
60	3.5%

Divisions C, F, and H (Uniformed Bodies)

<u>Age</u>	<u>Annual Rate of Salary Increase</u>
20	11.7%
35	6.1%
50	4.3%
60	3.5%

CITY OF KNOXVILLE PENSION SYSTEM
Schedule of Active Member Valuation Data by Section

General Government Members:

Valuation Date	Number Active		Annual Average	Percent Increase
	Members	Annual Payroll	Pay	Average Pay
6/30/2018	763	\$35,219,197	\$46,159	2.4%
6/30/2017	790	\$35,614,930	\$45,082	1.8%
6/30/2016	791	\$35,037,801	\$44,296	2.6%
6/30/2015	806	\$34,812,676	\$43,192	0.8%
6/30/2014	792	\$33,928,906	\$42,840	0.8%
6/30/2013	773	\$32,847,136	\$42,493	1.7%
6/30/2012	754	\$31,504,397	\$41,783	-0.6%
6/30/2011	757	\$31,806,023	\$42,016	3.9%
6/30/2010	782	\$31,631,191	\$40,449	3.1%
6/30/2009	782	\$30,686,057	\$39,240	1.4%

Board of Education Members:

Valuation Date	Number Active		Annual Average	Percent Increase
	Members	Annual Payroll	Pay	Average Pay
6/30/2018	2	\$56,972	\$28,486	0.0%
6/30/2017	2	\$56,972	\$28,486	37.3%
6/30/2016	4	\$82,979	\$20,745	49.9%
6/30/2015	6	\$83,024	\$13,837	-9.7%
6/30/2014	7	\$107,255	\$15,322	-1.9%
6/30/2013	9	\$140,501	\$15,611	27.4%
6/30/2012	13	\$159,344	\$12,257	34.9%
6/30/2011	20	\$181,734	\$9,087	84.9%
6/30/2010	37	\$181,828	\$4,914	-27.6%
6/30/2009	49	\$332,428	\$6,784	-21.2%

Uniformed Bodies Members:

Valuation Date	Number Active		Annual Average	Percent Increase
	Members	Annual Payroll	Pay	Average Pay
6/30/2018	664	\$36,744,459	\$55,338	3.2%
6/30/2017	689	\$36,944,734	\$53,621	-0.2%
6/30/2016	677	\$36,360,988	\$53,709	1.6%
6/30/2015	683	\$36,096,249	\$52,850	5.9%
6/30/2014	718	\$35,816,751	\$49,884	1.6%
6/30/2013	709	\$34,794,666	\$49,076	2.9%
6/30/2012	707	\$33,732,610	\$47,712	2.0%
6/30/2011	691	\$32,322,013	\$46,776	4.7%
6/30/2010	720	\$32,164,113	\$44,672	3.2%
6/30/2009	683	\$29,567,384	\$43,290	3.9%

CITY OF KNOXVILLE PENSION SYSTEM
Schedule of Retiree and Beneficiary Data by Section

General Government:

Valuation Date	<u>Added to Rolls</u>		<u>Removed from Rolls</u>		<u>On Rolls at Year End</u>		Average Annual Allowance	% Incr. Avg. Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance		
6/30/2018	43	\$1,254,396	27	\$419,412	617	\$12,487,400	\$20,239	4.4%
6/30/2017	33	\$839,795	32	\$531,929	601	\$11,652,416	\$19,388	2.5%
6/30/2016	39	\$1,210,660	24	\$295,947	600	\$11,344,550	\$18,908	6.1%
6/30/2015	37	\$1,052,460	26	\$416,700	585	\$10,429,837	\$17,829	4.5%
6/30/2014	39	\$1,024,381	21	\$311,110	574	\$9,794,076	\$17,063	4.5%
6/30/2013	36	\$209,646	6	\$61,607	556	\$9,080,805	\$16,332	-3.8%
6/30/2012	39	\$800,266	25	\$245,266	526	\$8,932,766	\$16,982	3.8%
6/30/2011	**	**	**	**	512	\$8,377,766	\$16,363	7.5%
6/30/2010	**	**	**	**	501	\$7,626,367	\$15,222	0.9%
6/30/2009	**	**	**	**	493	\$7,435,404	\$15,082	8.3%

Board of Education:

Valuation Date	<u>Added to Rolls</u>		<u>Removed from Rolls</u>		<u>On Rolls at Year End</u>		Average Annual Allowance	% Incr. Avg. Allowance
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance		
6/30/2018	6	\$182,276	45	\$577,517	747	\$7,210,364	\$9,652	-0.2%
6/30/2017	8	\$268,119	52	\$694,992	786	\$7,605,605	\$9,676	0.0%
6/30/2016	16	\$283,637	39	\$527,488	830	\$8,032,478	\$9,678	-0.3%
6/30/2015	6	\$230,209	58	\$663,345	853	\$8,276,329	\$9,703	0.8%
6/30/2014	23	\$333,791	40	\$497,027	905	\$8,709,465	\$9,624	0.0%
6/30/2013	24	\$421,438	59	\$712,806	922	\$8,872,701	\$9,623	0.5%
6/30/2012	13	\$413,011	41	\$460,585	957	\$9,164,069	\$9,576	2.4%
6/30/2011	**	**	**	**	985	\$9,211,643	\$9,352	-0.3%
6/30/2010	**	**	**	**	1,007	\$9,450,029	\$9,384	1.6%
6/30/2009	**	**	**	**	1,026	\$9,473,846	\$9,234	0.7%

CITY OF KNOXVILLE PENSION SYSTEM
Schedule of Retiree and Beneficiary Data by Section (Continued)

Uniformed Bodies:

Valuation Date	<u>Added to Rolls</u>		<u>Removed from Rolls</u>		<u>On Rolls at Year End</u>		Average	% Incr.
	Number	Annual Allowance	Number	Annual Allowance	Number	Annual Allowance	Annual Allowance	Avg. Allowance
6/30/2018	38	\$2,154,396	24	\$1,056,095	716	\$25,723,571	\$35,927	2.4%
6/30/2017	37	\$2,073,560	34	\$1,089,574	702	\$24,625,270	\$35,079	3.7%
6/30/2016	57	\$1,125,519	31	\$491,229	699	\$23,641,283	\$33,822	-1.1%
6/30/2015	11	\$1,060,917	22	\$642,363	673	\$23,006,993	\$34,186	3.5%
6/30/2014	21	\$1,161,912	22	\$601,379	684	\$22,588,439	\$33,024	2.7%
6/30/2013	22	\$1,257,604	25	\$395,164	685	\$22,027,906	\$32,158	4.5%
6/30/2012	22	\$710,114	26	\$469,872	688	\$21,165,466	\$30,764	1.7%
6/30/2011	**	**	**	**	692	\$20,925,224	\$30,239	3.9%
6/30/2010	**	**	**	**	696	\$20,261,542	\$29,111	8.0%
6/30/2009	**	**	**	**	696	\$18,762,832	\$26,958	2.0%

** Only seven years of complete data is available for this schedule as 2012 was the first year this information was captured. Information will be added to this schedule until 10 years are reported.

CITY OF KNOXVILLE PENSION SYSTEM

Solvency Test

A short-term solvency test is one means of checking a retirement plan's progress under its funding program. In a short-term solvency test, a plan's actuarial value of assets are compared with the accrued liabilities.

Valuation Date	Actuarial Accrued Liabilities				Portion of Accrued Liabilities Covered by Valuation Assets		
	(1)	(2)	(3)	Valuation Assets	(1)	(2)	(3)
	Retirees, Beneficiaries & Defined Contribution Accounts	Terminated Vested Members	Active Members				
6/30/2018	\$498,101,727	\$41,571,266	\$254,965,163	\$584,314,809	100%	100%	18%
6/30/2017	\$483,794,933	\$38,187,462	\$253,894,646	\$566,872,686	100%	100%	18%
6/30/2016	\$464,619,843	\$35,812,397	\$238,752,810	\$559,557,871	100%	100%	25%
6/30/2015	\$451,656,077	\$28,736,146	\$236,448,215	\$550,957,059	100%	100%	30%
6/30/2014	\$450,555,300	\$26,857,039	\$225,612,840	\$532,054,261	100%	100%	24%
6/30/2013	\$442,310,943	\$24,260,623	\$216,129,202	\$518,592,807	100%	100%	24%
6/30/2012	\$434,069,158	\$21,472,640	\$205,883,650	\$513,358,762	100%	100%	28%
6/30/2011	\$401,136,312	\$18,232,145	\$176,226,952	\$512,823,411	100%	100%	53%
6/30/2010	\$390,077,927	\$21,869,010	\$166,233,889	\$512,943,851	100%	100%	61%
6/30/2009	\$379,511,119	\$26,270,166	\$155,878,730	\$523,121,786	100%	100%	75%

CITY OF KNOXVILLE PENSION SYSTEM

Analysis of Financial Experience

Approximate reconciliation of gains (losses) in the unfunded accrued liability resulting from differences between assumed experience and actual experience:

Gains/(Losses) in Millions	<u>General</u> <u>Government</u>	<u>Division H</u> <u>General</u> <u>Government</u>	<u>Uniformed</u> <u>Bodies</u>	<u>Division H</u> <u>Uniformed</u> <u>Bodies</u>	<u>Board of</u> <u>Education</u>	<u>Total</u>
Assets (Actual minus Expected MV)	\$ (1.91)	\$ (0.09)	\$ (2.79)	\$ (0.04)	\$ (0.27)	\$ (5.10)
Plan Experience:						
Retirement/Termination	(0.66)	0.08	(2.43)	(0.01)	0.01	(3.01)
Deaths	(0.70)	-	(1.59)	-	0.11	(2.18)
New Entrants	-	(0.24)	-	(0.04)	-	(0.28)
Salary Increases	0.18	(0.08)	0.82	(0.02)	-	0.90
Inactive Data Adjustments*	1.08	-	2.37	-	0.62	4.07
Disabled	-	-	0.75	0.05	-	0.80
DROP Elections	(0.54)	-	(0.61)	-	-	(1.15)
G1 to G2 Transfers	(0.10)	-	-	-	-	(0.10)
Actual Benefit Payments	0.19	0.16	1.06	0.04	0.10	1.55
Other	<u>0.48</u>	<u>0.07</u>	<u>0.62</u>	<u>0.01</u>	<u>-</u>	<u>1.18</u>
Total Plan Experience	<u>(0.07)</u>	<u>(0.01)</u>	<u>0.99</u>	<u>0.03</u>	<u>0.84</u>	<u>1.78</u>
Assumption Changes:						
None	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>	<u>-</u>
Net Changes	<u><u>(1.98)</u></u>	<u><u>(0.10)</u></u>	<u><u>(1.80)</u></u>	<u><u>(0.01)</u></u>	<u><u>0.57</u></u>	<u><u>(3.32)</u></u>

*Changes to benefit amount, benefit form of payment, spouse age, etc.

CITY OF KNOXVILLE PENSION SYSTEM
Schedule of Funding Progress

Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (UAAL) (b-a)**	Funded Ratio (a/b)	Annual Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b-a)/c)
7/1/2018	\$ 584,314,809	\$ 794,638,156	\$ 210,323,347	73.5%	\$ 72,020,628	292.0%
7/1/2017	566,872,686	775,877,041	209,004,355	73.1%	72,616,635	287.8%
7/1/2016	559,557,871	739,185,050	179,627,179	75.7%	71,481,768	251.3%
7/1/2015	550,957,059	716,840,438	165,883,379	76.9%	70,991,948	233.7%
7/1/2014	532,054,261	703,025,179	170,970,918	75.7%	69,852,912	244.8%
7/1/2013	518,592,807	682,700,768	164,107,961	76.0%	67,782,302	242.1%
7/1/2012	513,358,762	661,425,448	148,066,686	77.6%	65,396,351	226.4%
7/1/2011	512,823,411	595,595,409	82,771,998	86.1%	64,309,770	128.7%
7/1/2010	512,943,851	578,180,826	65,236,975	88.7%	63,977,132	102.0%
7/1/2009	523,121,786	561,660,015	38,538,229	93.1%	60,585,868	63.6%

Notes: This schedule does not include Board of Education payroll amounts for teachers with frozen benefits as described in Note 3.

See the 10-year schedule of actuarially determined and actual contributions provided in Required Supplementary Information.

STATISTICAL SECTION

CITY OF KNOXVILLE PENSION SYSTEM

Statistical Section Overview

This portion of the financial report presents additional information to provide readers with added historical perspective, context, and detail to assist in using the information in the financial statements, notes to the financial statements, and required supplementary information to understand and assess the System's financial condition. It also contains benefits and service data to help the reader understand how the System's financial report relates to the services of the System and the activities it performs.

SCHEDULE OF CHANGES IN PLAN FIDUCIARY NET POSITION – 10 YEARS

	Fiscal Year Ended June 30				
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Additions to Plan Net Position					
Net Investment Earnings (Loss)	\$ (92,570,850)	\$ 53,012,291	\$ 95,926,711	\$ (1,083,281)	\$ 62,606,358
Employer Contributions	7,159,207	7,623,044	9,506,133	21,810,499	13,762,164
Member Contributions	<u>3,408,254</u>	<u>3,556,280</u>	<u>3,718,132</u>	<u>3,847,851</u>	<u>3,884,989</u>
<i>Total Additions to Plan Net Position</i>	<u>\$ (82,003,389)</u>	<u>\$ 64,191,615</u>	<u>\$ 109,150,976</u>	<u>\$ 24,575,069</u>	<u>\$ 80,253,511</u>
Deductions from Plan Net Position					
Benefit Payments	\$ 35,672,082	\$ 37,337,938	\$ 38,514,633	\$ 39,262,300	\$ 40,578,906
Refunds	367,637	357,110	443,124	422,958	881,014
Administrative Expenses	<u>467,677</u>	<u>407,295</u>	<u>463,886</u>	<u>670,739</u>	<u>625,958</u>
<i>Total Deductions from Plan Net Position</i>	<u>\$ 36,507,396</u>	<u>\$ 38,102,343</u>	<u>\$ 39,421,643</u>	<u>\$ 40,355,997</u>	<u>\$ 42,085,878</u>
Change in Plan Net Position	<u>\$ (118,510,785)</u>	<u>\$ 26,089,272</u>	<u>\$ 69,729,333</u>	<u>\$ (15,780,928)</u>	<u>\$ 38,167,633</u>

SCHEDULE OF BENEFITS BY TYPE OF BENEFIT

	Fiscal Year Ended June 30				
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Age and Service Benefits	\$ 27,796,150	\$ 27,658,595	\$ 28,493,299	\$ 29,745,414	\$ 30,434,474
Beneficiaries	4,241,411	5,458,807	5,642,394	5,689,849	5,916,506
Disability Benefits	2,843,065	2,927,294	3,027,250	2,885,228	2,909,177
DROP Benefits	<u>791,456</u>	<u>1,293,242</u>	<u>1,351,690</u>	<u>941,809</u>	<u>1,318,749</u>
Total Benefit Payments	<u>\$ 35,672,082</u>	<u>\$ 37,337,938</u>	<u>\$ 38,514,633</u>	<u>\$ 39,262,300</u>	<u>\$ 40,578,906</u>
Refunds to Terminated Members	<u>\$ 367,637</u>	<u>\$ 357,110</u>	<u>\$ 443,124</u>	<u>\$ 422,958</u>	<u>\$ 881,014</u>

CITY OF KNOXVILLE PENSION SYSTEM

SCHEDULE OF CHANGES IN PLAN FIDUCIARY NET POSITION – 10 YEARS (Continued)

	Fiscal Year Ended June 30				
	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
Additions to Plan Net Position					
Net Investment Earnings (Loss)	\$ 87,070,012	\$ 7,873,669	\$ (1,048,951)	\$ 63,411,480	\$ 37,559,310
Employer Contributions	15,239,948	22,590,334	23,900,725	23,791,166	25,719,853
Member Contributions	<u>4,000,994</u>	<u>4,122,537</u>	<u>4,414,955</u>	<u>4,417,803</u>	<u>4,214,055</u>
<i>Total Additions to Plan Net Position</i>	<u>\$ 106,310,954</u>	<u>\$ 34,586,540</u>	<u>\$ 27,266,729</u>	<u>\$ 91,620,449</u>	<u>\$ 67,493,218</u>
Deductions from Plan Net Position					
Benefit Payments	\$ 41,502,497	\$ 42,608,879	\$ 43,946,206	\$ 45,379,447	\$ 46,640,954
Refunds	768,187	910,626	771,127	844,031	853,221
Administrative Expenses	<u>828,357</u>	<u>740,110</u>	<u>679,971</u>	<u>721,540</u>	<u>707,932</u>
<i>Total Deductions from Plan Net Position</i>	<u>\$ 43,099,041</u>	<u>\$ 44,259,615</u>	<u>\$ 45,397,304</u>	<u>\$ 46,945,018</u>	<u>\$ 48,202,107</u>
Change in Plan Net Position	<u>\$ 63,211,913</u>	<u>\$ (9,673,075)</u>	<u>\$ (18,130,575)</u>	<u>\$ 44,675,431</u>	<u>\$ 19,291,111</u>

SCHEDULE OF BENEFITS BY TYPE OF BENEFIT (Continued)

	Fiscal Year Ended June 30				
	<u>2014</u>	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
Age and Service Benefits	\$ 31,371,089	\$ 32,047,709	\$ 33,080,572	\$ 34,260,695	\$ 34,496,626
Beneficiaries	6,095,555	6,337,654	6,271,499	6,948,065	7,307,891
Disability Benefits	2,954,808	2,929,203	2,880,244	2,794,187	2,701,516
DROP Benefits	<u>1,081,045</u>	<u>1,294,313</u>	<u>1,713,891</u>	<u>1,376,500</u>	<u>2,134,921</u>
Total Benefit Payments	<u>\$ 41,502,497</u>	<u>\$ 42,608,879</u>	<u>\$ 43,946,206</u>	<u>\$ 45,379,447</u>	<u>\$ 46,640,954</u>
Refunds to Terminated Members	<u>\$ 768,187</u>	<u>\$ 910,626</u>	<u>\$ 771,127</u>	<u>\$ 844,031</u>	<u>\$ 853,221</u>

CITY OF KNOXVILLE PENSION SYSTEM
SCHEDULE OF RETIRED MEMBERS BY TYPE OF BENEFIT
JUNE 30, 2018

Monthly Benefit Amount	Number of Retirees	Type of Retirement			Option Selected*							
		Age & Service	Disability	Beneficiary	1	2	3	4	5	6	7	8
\$1 - \$250	177	159	1	17	113	28	1	10	0	2	1	5
\$251 - \$500	271	234	6	31	173	29	7	20	4	1	3	3
\$501 - \$750	211	170	8	33	111	34	6	20	1	2	2	2
\$751 - \$1,000	126	82	10	34	63	13	4	9	1	1	1	0
\$1,001 - \$1,500	177	96	12	69	58	26	5	15	0	0	1	3
\$1,501 - \$1,750	105	70	10	25	47	16	1	12	1	1	1	1
\$1,751 - \$2,000	116	68	23	25	51	20	3	16	0	1	0	0
\$2,001 - \$2,250	99	52	19	28	34	19	6	7	0	1	2	2
\$2,251 - \$2,500	102	55	16	31	42	14	1	11	2	1	0	0
\$2,501 - \$3,000	165	110	19	36	65	36	6	18	1	1	0	2
\$3,001 - \$3,250	69	60	2	7	26	14	11	10	0	0	0	1
\$3,251 - \$3,500	84	72	0	12	22	27	7	10	3	2	0	1
\$3,501 - \$3,750	71	58	0	13	17	25	5	11	0	0	0	0
\$3,751 - \$4,000	67	58	0	9	16	17	13	9	1	1	1	0
\$4,001 - \$4,250	62	61	0	1	27	17	4	11	0	0	2	0
\$4,251 - \$5,000	77	75	0	2	34	19	7	13	0	1	1	0
\$5,001 & over	46	44	0	2	20	14	2	8	0	0	0	0

***Option Selected:**

- | | | |
|-----------------------------|----------------------------|---------------------|
| 1 – Life only | 4 – 50% Joint and Survivor | 7 – 15 Year Certain |
| 2 – 100% Joint and Survivor | 5 – 5 Year Certain | 8 – Cash Refund |
| 3 – 75% Joint and Survivor | 6 – 10 Year Certain | |

CITY OF KNOXVILLE PENSION SYSTEM
AVERAGE MONTHLY BENEFIT PAYMENTS TO NEW RETIREES

Retirement Effective Dates for Fiscal Year Ending June	Years of Credited Service							
	<u>30</u>	<u>5-10</u>	<u>11-15</u>	<u>16-20</u>	<u>21-25</u>	<u>26-30</u>	<u>31-35</u>	<u>36-40</u>
2018								
Avg Monthly Benefit	\$272	\$1,326	\$2,601	\$2,889	\$2,923	\$4,195	\$3,012	\$3,368
Final Avg Monthly Salary	\$1,724	\$5,208	\$6,306	\$5,178	\$4,793	\$8,338	\$4,290	\$4,806
Number of Retirees	8	5	4	4	24	2	5	7
2017								
Avg Monthly Benefit	\$814	\$888	\$1,070	\$2,058	\$3,228	\$3,788	\$3,966	\$1,954
Final Avg Monthly Salary	\$6,101	\$2,789	\$2,930	\$3,085	\$3,150	\$3,828	\$3,469	\$2,994
Number of Retirees	3	9	6	12	11	5	2	1
2016								
Avg Monthly Benefit	\$366	\$439	\$1,954	\$2,201	\$3,150	\$3,333	\$2,752	\$4,079
Final Avg Monthly Salary	\$3,462	\$3,213	\$5,604	\$3,935	\$5,211	\$5,181	\$4,395	\$5,160
Number of Retirees	8	10	9	8	21	4	1	5
2015								
Avg Monthly Benefit	\$289	\$887	\$1,266	\$2,109	\$2,623	\$3,214	\$2,238	\$575
Final Avg Monthly Salary	\$2,588	\$3,337	\$3,758	\$4,240	\$4,755	\$4,888	\$3,825	\$4,029
Number of Retirees	6	8	3	10	14	3	3	1
2014								
Avg Monthly Benefit	\$485	\$644	\$1,081	\$2,300	\$2,766	\$3,152	\$2,801	\$1,798
Final Avg Monthly Salary	\$3,899	\$2,272	\$2,514	\$3,417	\$3,757	\$3,403	\$3,367	\$2,772
Number of Retirees	3	7	12	8	3	7	5	4
2013								
Avg Monthly Benefit	\$206	\$448	\$762	\$1,501	\$2,342	\$2,949	\$2,681	\$3,170
Final Avg Monthly Salary	\$1,867	\$2,824	\$3,646	\$3,315	\$3,342	\$3,368	\$3,150	\$3,598
Number of Retirees	4	13	9	3	7	9	9	2
2012								
Avg Monthly Benefit	\$657	\$960	\$672	\$1,322	\$2,201	\$2,046	\$2,569	\$394
Final Avg Monthly Salary	\$4,667	\$3,987	\$2,552	\$2,841	\$3,843	\$3,900	\$5,194	\$4,628
Number of Retirees	6	12	5	2	6	10	7	3
2011								
Avg Monthly Benefit	\$932	\$871	\$1,302	\$1,302	\$1,900	\$1,828	\$1,225	\$2,092
Final Avg Monthly Salary	\$3,387	\$3,638	\$3,853	\$3,853	\$3,232	\$4,760	\$4,806	\$4,411
Number of Retirees	3	10	2	6	3	7	18	5
2010								
Avg Monthly Benefit	\$340	\$634	\$1,088	\$1,355	\$859	\$1,358	\$1,967	\$3,411
Final Avg Monthly Salary	\$2,180	\$2,668	\$3,551	\$4,299	\$3,004	\$3,743	\$4,225	\$3,994
Number of Retirees	12	5	4	3	7	15	10	2
2009								
Avg Monthly Benefit	\$454	\$649	\$873	\$730	\$3,223	\$1,539	\$1,555	\$1,942
Final Avg Monthly Salary	\$2,829	\$3,018	\$2,736	\$2,577	\$4,973	\$4,070	\$4,415	\$3,610
Number of Retirees	6	4	8	2	8	17	16	4

COMPLIANCE SECTION



Independent Auditor's Report on Internal Control Over
Financial Reporting and on Compliance and Other Matters
Based on an Audit of Financial Statements Performed in
Accordance with *Government Auditing Standards*

To the Members of the Pension Board
City of Knoxville Pension System
Knoxville, Tennessee

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the City of Knoxville Pension System (the "System"), a pension trust fund of the City of Knoxville, Tennessee, which comprise the statement of fiduciary net position as of June 30, 2018, and the related statement of changes in fiduciary net position for the year then ended and the related notes to the financial statements, and have issued our report thereon dated December 13, 2018.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinion on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.



Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Nashville, Tennessee
December 13, 2018

CITY OF KNOXVILLE PENSION SYSTEM
Schedule of Prior Year Findings
For the Year Ended June 30, 2018

The System had no prior year audit findings.