



**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Basic Financial Statements and Required Supplementary Information

June 30, 2018 and 2017

(With Independent Auditors' Report Thereon)

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Table of Contents

	Page(s)
Independent Auditors' Report	1-2
Management's Discussion and Analysis (Unaudited)	3-6
Basic Financial Statements:	
Statements of Fiduciary Net Position	7
Statements of Changes in Fiduciary Net Position	8
Notes to Basic Financial Statements	9-16
Required Supplementary Information (Unaudited)	
Schedule of Changes in the System's Net OPEB Liability and Related Ratios	17
Schedule of System and Other Contributing Entity Contributions	18-19
Notes to Required Supplementary Information	20-21
Schedule of Investment Returns	22



KPMG LLP
515 Broadway
Albany, NY 12207-2974

Independent Auditors' Report

The Board of Trustees
New York State Teachers' Retirement System
Retired Employee Health Benefit Trust:

We have audited the accompanying financial statements of the New York State Teachers' Retirement System Retired Employee Health Benefits Trust (the Trust), as of and for the years ended June 30, 2018 and 2017, and the related notes to the financial statements, which collectively comprise the Trust's basic 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 U.S. generally accepted accounting principles; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the 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 auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the 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 opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the fiduciary net position of the New York State Teachers' Retirement System Retired Employee Health Benefits Trust as of June 30, 2018 and 2017, and the changes in its fiduciary net position for the years then ended, in accordance with U.S. generally accepted accounting principles.



Other Matters

Required Supplementary Information

U.S. generally accepted accounting principles require that the management's discussion and analysis and the schedules included under Required Supplementary Information in the accompanying table of contents be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the GASB who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

KPMG LLP

Albany, New York
November 1, 2018

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Management's Discussion and Analysis

June 30, 2018 and 2017

(Unaudited)

The following discussion and analysis of the financial performance of the New York State Teachers' Retirement System Retired Employee Health Benefits Trust (the Trust) provides an overview of its activities for the years ended June 30, 2018, 2017, and 2016. Its purpose is to provide explanations and insights into the information presented in the financial statements, notes to the financial statements, and required supplementary information.

Financial Highlights

- In 2018, the Trust received a contribution in the amount of \$5.5 million from the New York State Teachers' Retirement System (the System) to invest and accumulate assets in order to provide health insurance benefits to retirees of the System. The contribution represents 104% of the Actuarially Determined Contribution (ADC) for fiscal year 2018. Contributions to the Trust in 2017 and 2016 were \$5.5 million each year, and represent 102% of the ADC in 2017 and 115% of the ADC in 2016.
- Total Other Postemployment Benefits (OPEB) liability as of June 30, 2018 is \$84,218,609, an increase of \$2,874,430 from total OPEB liability of \$81,344,179 as of June 30, 2017. Net OPEB liability at June 30, 2018 and 2017 was \$43,466,407 and \$45,494,100, respectively.

Overview of the Financial Statements

The following discussion and analysis is intended to assist the reader in better understanding the purpose and meaning of each of the key components of the Trust's financial statements, which comprise the following:

1. *The Statements of Fiduciary Net Position* present the Trust's assets and liabilities by major categories and may serve over time as a useful indicator of the Trust's financial position. The difference between assets and liabilities represents the net position restricted for other postemployment health benefits. The statement also compares assets and liabilities by class to the previous year, which offers the reader the opportunity to note changes in each class of asset and liability from year to year.
2. *The Statements of Changes in Fiduciary Net Position* provide information on the changes in the Trust's net position during the current fiscal year. The majority of additions are derived from net appreciation in fair value of investments, investment income, and contributions from the System. Deductions include other postemployment health benefit payments and professional fees and services. For comparison purposes, information pertaining to the previous year's Statement of Changes in Fiduciary Net Position is also provided.
3. *The Notes to Basic Financial Statements* are an essential part of the financial statements. They provide important background and detailed information about the Trust, its investments, and the statements themselves.
4. *The Required Supplementary Information (RSI)* consists of information pertaining to the Trust's actuarial methods and assumptions and provides data on the System's net OPEB liability, the changes in the System's net OPEB liability, the System's contributions, and the Trust's investment returns.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Management's Discussion and Analysis

June 30, 2018 and 2017

(Unaudited)

Financial Analysis

Tables 1 and 2 summarize the Trust's financial position and results for the years 2018, 2017, and 2016. The changes from year to year are due to a combination of the annual employer contribution, changes in fair value of investments, and retired employee health benefit payments.

Table 1 – Summary of Fiduciary Net Position

	<u>2018</u>	<u>June 30 2017</u>	<u>2016</u>	<u>Amount increase, 2017 to 2018</u>	<u>Percentage change of total, 2017 to 2018</u>
Investments at fair value:					
Mutual funds	\$ 40,807,202	\$ 35,865,079	\$ 29,577,536	\$ 4,942,123	13.79 %
Total investments	<u>40,807,202</u>	<u>35,865,079</u>	<u>29,577,536</u>	<u>4,942,123</u>	<u>13.79</u>
Total assets	<u>40,807,202</u>	<u>35,865,079</u>	<u>29,577,536</u>	<u>4,942,123</u>	<u>13.79</u>
Liabilities:					
Accounts payable	<u>55,000</u>	<u>15,000</u>	<u>12,700</u>	<u>40,000</u>	<u>0.11</u>
Total liabilities	<u>55,000</u>	<u>15,000</u>	<u>12,700</u>	<u>40,000</u>	<u>0.11</u>
Net position restricted for other postemployment health benefits	\$ <u>40,752,202</u>	\$ <u>35,850,079</u>	\$ <u>29,564,836</u>	\$ <u>4,902,123</u>	<u>13.68 %</u>

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Management's Discussion and Analysis

June 30, 2018 and 2017

(Unaudited)

As shown in Table 2, the Trust's 2018 and 2017 net position increased by \$4.9 million and \$6.3 million, respectively. The increase in 2018 is primarily a result of employer contributions of \$5.5 million and investment income of \$3.2 million, offset by benefit payments of \$3.8 million. The increase in 2017 is the result of employer contributions of \$5.5 million and investment income of \$4.2 million, offset by benefit payments of \$3.4 million.

Table 2 – Summary of Changes in Fiduciary Net Position

	Years ended June 30			Amount increase (decrease) 2017 to 2018	Percentage change of total, 2017 to 2018
	2018	2017	2016		
Additions:					
Investment income:					
Net appreciation (depreciation) in fair value of investments	\$ 2,286,974	\$ 3,362,648	\$ (290,282)	\$ (1,075,674)	(3.00)%
Dividend income	925,529	849,608	672,426	75,921	0.21
Net investment income	3,212,503	4,212,256	382,144	(999,753)	(2.79)%
Contributions:					
Employer	5,500,000	5,500,000	5,500,000	—	—
Total contributions	5,500,000	5,500,000	5,500,000	—	—
Total additions	8,712,503	9,712,256	5,882,144	(999,753)	(2.79)%
Deductions:					
Retired employee health benefit payments	3,756,945	3,412,013	2,979,914	344,932	0.96
Professional fees and services	53,435	15,000	12,700	38,435	0.11
Total deductions	3,810,380	3,427,013	2,992,614	383,367	1.07
Net increase in net position	4,902,123	6,285,243	2,889,530	(1,383,120)	(3.86)%
Net position restricted for other postemployment health benefits:					
Beginning of year	35,850,079	29,564,836	26,675,306	6,285,243	17.53
End of year	\$ 40,752,202	\$ 35,850,079	\$ 29,564,836	\$ 4,902,123	13.67 %

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Management's Discussion and Analysis

June 30, 2018 and 2017

(Unaudited)

Economic Factors

The economic factors that are of primary significance for the Trust are the annual contributions made by the System and the returns earned in the capital markets. Changes in healthcare premiums, plan provisions, actuarial assumptions, and demographic changes can also have a significant impact on the net OPEB liability and funded status of the Trust. All of these factors play a part in determining the amount the System must contribute to fund current and future retired employee benefits. In 2018, the Trust experienced significant appreciation in investments. The Trust's fiduciary net position as a percentage of the total OPEB liability is 48.39% as of June 30, 2018 and 44.07% as of June 30, 2017.

Requests for Information

This financial report is designed to provide active members, retirees, taxpayers, and anyone else who is interested, with a general overview of the financial activities of the Trust. Questions about this report or requests for additional financial information should be addressed to the Public Information Office, New York State Teachers' Retirement System Retired Employee Health Benefits Trust, 10 Corporate Woods Drive, Albany, NY 12211 or by e-mail at communit@nystrs.org.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Statements of Fiduciary Net Position

June 30, 2018 and 2017

	2018	2017
Assets:		
Investments – at fair value (note 3, 4 and 5):		
Mutual funds	\$ 40,807,202	\$ 35,865,079
Total investments	40,807,202	35,865,079
Total assets	40,807,202	35,865,079
Liabilities:		
Accounts payable	55,000	15,000
Total liabilities	55,000	15,000
Net position restricted for other postemployment health benefits	\$ 40,752,202	\$ 35,850,079

See accompanying notes to financial statements.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Statements of Changes in Fiduciary Net Position

Years ended June 30, 2018 and 2017

	2018	2017
Additions:		
Investment income:		
Net appreciation in fair value of investments	\$ 2,286,974	\$ 3,362,648
Dividend income	925,529	849,608
Net investment income	3,212,503	4,212,256
Contributions:		
Employer	5,500,000	5,500,000
Total contributions	5,500,000	5,500,000
Total additions	8,712,503	9,712,256
Deductions:		
Retired employee health benefit payments	3,756,945	3,412,013
Professional fees and services	53,435	15,000
Total deductions	3,810,380	3,427,013
Net increase in net position	4,902,123	6,285,243
Net position restricted for other postemployment health benefits:		
Beginning of year	35,850,079	29,564,836
End of year	\$ 40,752,202	\$ 35,850,079

See accompanying notes to financial statements.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Notes to Basic Financial Statements

June 30, 2018 and 2017

(1) Plan Description

The New York State Teachers' Retirement System Retired Employee Health Benefits Trust (the Trust) was created under the general laws of New York. The Trust was created in 2008 for the sole purpose of receiving irrevocable contributions from the New York State Teachers' Retirement System (the System) to provide postemployment healthcare benefits to eligible System employees who retire from the System, in accordance with the terms of the Trust. Trust assets are legally protected from creditors of the System.

The Trust is a defined-benefit, single-employer, OPEB plan that accumulates resources to pay current and future health insurance premiums for retired System employees. These healthcare plans are designed and administered by the New York State Health Insurance Program (NYSHIP).

The Trust is administered by a 10-member Board to provide healthcare benefits for retired System employees and their beneficiaries. The members of the Board of the Trust are the same as those of the System. The Trust's Board is composed of:

- Three teacher members elected from the active System membership
- One retired member elected by a mail vote of all retired System members
- Two school administrators appointed by the Commissioner of Education
- Two present or former school board members, experienced in the fields of finance and investment, elected by the Board of Regents. At least one of these individuals must have experience as an executive of an insurance company.
- One present or former bank executive elected by the Board of Regents
- The State Comptroller or his/her designee

As of June 30, the Trust's membership consisted of:

	2018	2017
Retired participants and their survivors currently receiving benefits	272	258
Active participants	354	364
Total	626	622

(a) Benefits

Pursuant to contractual agreement and policy, the System provides postemployment healthcare benefits to eligible System employees who retire from the System. The System is a voluntary participating employer in NYSHIP. Article XI of the New York State Civil Service Law assigns the authority to NYSHIP to establish and amend the benefit provisions of the plan and to establish maximum obligations of the plan participants to contribute to the plan. The System's Board is authorized to establish the contribution rates of System retirees below those set by Civil Service Law, and they are set as part of the collective bargaining process.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Notes to Basic Financial Statements

June 30, 2018 and 2017

In order to be eligible for OPEB, employees must have worked for at least 10 years for the System, retire directly from System employment, and commence receipt of their pension from the New York State and Local Employees' Retirement System. Dependents may also be covered.

System retirees are required to contribute toward the cost of their coverage if retired on or after July 1, 1985. Post July 1, 1985 retirees are currently required to contribute an amount equal to 12% of the premium paid by the System up to the premium of the Empire Plan option. Retiree contributions are subject to an annual maximum that varies based upon salary at retirement and the schedule in the table below:

<u>Salary</u>	<u>Effective date</u>	
	<u>January 1, 2017</u>	<u>January 1, 2018</u>
Up to \$40,000	\$ 1,825	\$ 1,950
40,001 - 60,000	2,025	2,150
60,001 - 90,000	2,250	2,375
90,000 and over	2,425	2,625

If more expensive coverage is elected, the retiree pays 12% of the Empire Plan option and 100% of the difference between the two.

Employees who retire on or after April 1, 1991 are eligible to have accumulated unused sick leave converted into a credit to offset their contribution requirement.

Under the plan, benefit coverage continues as survivor benefits for an eligible retiree's beneficiaries upon the death of the retiree.

(b) Employer Contribution

The employer contribution, or funding, of the System's OPEB obligation is at the discretion of the System's management and Board. The System's current policy is to prefund benefits by contributing an amount that is, at a minimum, equal to the ADC.

Contributions in 2018 were \$5.5 million, which approximated 18.49% of covered payroll. Contributions in 2017 were \$5.5 million, which approximated 18.91% of covered payroll.

(2) Summary of Significant Accounting Policies

(a) Basis of Accounting

The Trust's financial statements are prepared using the accrual basis of accounting and follow the provisions of GASB Statement No. 74, *Financial Reporting for Postemployment Benefit Plans Other than Pension Plans* (GASB 74). Contributions from the System are recognized when due pursuant to legal requirement. Benefits and refunds are recognized when due and payable in accordance with the terms of the plan.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Notes to Basic Financial Statements

June 30, 2018 and 2017

(b) Method Used to Value Investments

Plan investments are reported at fair value. Quoted market prices have been used to value investments. Investment purchases and sales are recorded on a trade-date basis.

Given the inherent nature of investments, it is reasonably possible that changes in the value of those investments will occur in the near term and that such changes could materially affect the amounts reported in the statements of fiduciary net position.

(c) Retired Employee Health Benefit Payments

The Trust reimburses the System for the health insurance premiums attributable to retired System employees paid to NYSHIP on a monthly basis.

(d) Administrative Support

Administrative support for the Trust's investment, accounting, and legal operations is provided by the System at no charge to the Trust.

(e) Federal Tax Status

The Trust is exempt from federal income taxes under the Internal Revenue Code.

(f) Use of Estimates

Management of the Trust has made a number of estimates and assumptions relating to the reporting of plan assets and liabilities to prepare these financial statements in conformity with U.S. generally accepted accounting principles. Actual results could differ from those estimates.

(g) Adoption of Accounting Pronouncements

GASB Statement No. 85, *Omnibus 2017* (GASB 85): GASB 85 addresses practice issues that have been identified during implementation and application of certain GASB Statements. This Statement addresses a variety of topics including issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits. The adoption of GASB 85 resulted in no significant changes to the information reported in the Trust's financial statements.

(h) Accounting Pronouncements Applicable to the Trust, Issued but Not Yet Effective

GASB Statement No. 84, *Fiduciary Activities* (GASB 84): GASB 84 provides guidance on the identification of fiduciary activities for accounting and financial reporting purposes, including clarification of fiduciary activities and how these activities should be reported. GASB 84 will be effective for fiscal years beginning after December 15, 2018. The Trust is evaluating the impact of this statement.

(3) OPEB Plan Investments

(a) Investment Policy

All investment transactions undertaken on behalf of the Trust will be for the sole benefit of eligible employees, retirees and dependents, for the exclusive purpose of providing certain health care benefits to them and defraying reasonable administrative expenses. The System shall be responsible for managing and directing the investment of the Trust. The Trust's long-term objective is to earn an

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Notes to Basic Financial Statements

June 30, 2018 and 2017

average rate of return greater than the rate of return of the representative indicies for individual asset classes but no less than the actuarial assumption rate (currently 6.75% per annum).

(b) Asset Allocation

The Trust's asset allocation policy as adopted by the Board of Trustees diversifies Trust investments to reduce risk while maximizing the investment return.

The Trust's asset allocation targets at June 30, 2018 and 2017 are as follows:

<u>Asset class</u>	<u>Allowable range</u>	<u>Target percentage</u>
Domestic equities	40% to 60%	50 %
International equities	20% to 30%	25
Domestic fixed income securities	20% to 30%	24
Short-term	0% to 4%	1
Total		<u>100 %</u>

(c) Rate of Return

For the years ended June 30, 2018 and 2017, the annual money-weighted rate of return on Trust investments, net of OPEB plan investment expense, was 8.8% and 13.1%, respectively. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

(4) Deposit and Investment Risk Disclosure

The Trust has been authorized by the Board of Trustees to invest in passively managed mutual funds for domestic and international equity and domestic fixed income investments. Additionally, there is a federal money market mutual fund to allow the Trust to have liquid investments available for the payment of retired employee health benefits.

As of June 30, 2018 and 2017, the Trust did not hold investments in any one issuer that would represent 5.0% or more of fiduciary net position.

Investment securities are exposed to custodial credit risk if the securities are uninsured, are not registered in the name of the Trust, and are held by either the counterparty or the counterparty's trust department or agent but not in the Trust's name. Consistent with the Trust's investment policy, the investments are held by the Trust's custodian and registered in the Trust's name. The Trust does not have specific investment policies related to credit or interest rate risk of mutual fund holdings.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Notes to Basic Financial Statements

June 30, 2018 and 2017

The Trust has the following mutual fund holdings at June 30, 2018 and 2017:

Asset class	2018		2017	
	Fair value	Percentage of total	Fair value	Percentage of total
Domestic equities	\$ 20,910,886	51 %	\$ 17,866,141	50 %
International equities	9,823,421	24	9,170,524	25
Domestic fixed income securities	10,064,173	25	8,793,337	25
Short-term	8,722	—	35,077	—
Total	\$ 40,807,202	100 %	\$ 35,865,079	100 %

At June 30, 2018 and 2017, the Trust's domestic fixed income mutual fund had an average duration of 6.1 years, and an average credit quality rating as rated by Moody's Investor Services of Aaa/Aa for both years.

The Trust's short-term investments (federal money market mutual fund) at June 30, 2018 and 2017 had an average maturity of 50.5 days and an average credit quality rating of First Tier for both years.

(5) Fair Value Measurement

The Trust categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

At June 30, 2018 and 2017, the Trust had the following Level 1 investments:

	2018	2017
Mutual funds:		
Domestic fixed income securities	\$ 10,064,173	\$ 8,793,337
Domestic equities	20,910,886	17,866,141
International equities	9,823,421	9,170,524
	\$ 40,798,480	\$ 35,830,002

(6) Net OPEB Liability

The components of the net OPEB liability at June 30, 2018 and 2017 were as follows:

	2018	2017
Total OPEB liability	\$ 84,218,609	\$ 81,344,179
OPEB Plan fiduciary net position	40,752,202	35,850,079
Net OPEB liability	\$ 43,466,407	\$ 45,494,100
The OPEB plan's fiduciary net position as a percentage of total OPEB liability	48.39%	44.07%

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Notes to Basic Financial Statements

June 30, 2018 and 2017

(a) Actuarial Assumptions

The total OPEB liability at June 30, 2018 was determined using an actuarial valuation as of July 1, 2017, with update procedures used to roll forward the total OPEB liability to June 30, 2018. The total OPEB liability at June 30, 2017 was determined using an actuarial valuation as of July 1, 2016, with update procedures used to roll forward the total OPEB liability to June 30, 2017. The measurement of total OPEB liability at June 30, 2018 and 2017, respectively, used the following actuarial assumptions:

	<u>2018</u>	<u>2017</u>
Valuation date	July 1, 2017	July 1, 2016
Investment rate of return	6.75%	7.00%
Payroll increase rate	3.00%	3.00%
Salary increase rate	Varies by service from 3.00%-8.00%	Varies by service from 3.00%-8.00%
Healthcare cost trend rates:		
Non-Medicare	7.50% graded to 4.50% over 12 years	7.35% graded to 4.50% over 12 years
Medicare	8.00% graded to 4.50% over 14 years	8.50% graded to 4.50% over 12 years
Retiree premium	7.55% graded to 4.50% over 14 years	7.45% graded to 4.50% over 12 years
Pre-retirement mortality	Mortality rates are based on those used in the NYS/SUNY "Development of Recommended Actuarial Assumptions Participating Agency Version" dated December 2017.	Mortality rates are based on those used in the NYS/SUNY "Development of Recommended Actuarial Assumptions Participating Agency Version" dated September 2016.
Post-retirement mortality	Mortality rates are based on those used in the NYS/SUNY "Development of Recommended Actuarial Assumptions Participating Agency Version" dated December 2017. These rates were adjusted to reflect that the System's retirees are white collar and then projected generationally from 2014 with Scale MP-2014.	Mortality rates are based on those used in the NYS/SUNY "Development of Recommended Actuarial Assumptions Participating Agency Version" dated September 2016. These rates were adjusted to reflect that the System's retirees are white collar and then projected generationally from 2014 with Scale MP-2014.

The long-term expected rate of return on OPEB plan investments was determined using a building-block method in which best estimate ranges of expected future rates of return (expected returns, net of investment expense and inflation) are developed for each major asset class. These returns 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.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Notes to Basic Financial Statements

June 30, 2018 and 2017

Best estimates of arithmetic real rates of return for each major asset class included in the System's target asset allocation as of June 30, 2017 and June 30, 2016 are summarized in the following table:

Long-Term Expected Real Rate of Return*

Asset class	2017	2016
Domestic equities	6.49 %	6.89 %
International equities	7.49	7.89
Domestic fixed income securities	1.84	2.29
Short-term	1.19	1.28

* Real rates of return are net of the long-term inflation assumption of 2.00% for both 2017 and 2016.

(b) Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rates

Healthcare cost trend rates measure the anticipated overall rate at which health plan costs are expected to increase in future years. The following presents the net OPEB liability of the System using the healthcare cost trend rates presented previously in the actuarial assumptions, as well as what the System's net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than the applied healthcare cost trend rates:

System's Net OPEB Liability

	1% Decrease	Current Healthcare Cost Trend Rates	1% Increase
June 30, 2018	\$ 33,813,504	\$ 43,466,407	\$ 55,188,415
June 30, 2017	\$ 36,013,012	\$ 45,494,100	\$ 57,045,238

(c) Discount Rate

The discount rate used to measure the total pension liability as of June 30, 2018 and 2017 was 6.75% and 7.0%, respectively. The projection of cash flows used to determine the discount rate assumed that contributions would be made at rates equal to the actuarially determined contribution rates. Based on these assumptions, the OPEB Plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan participants. Therefore, the long-term expected rate of return on plan investments was applied to all periods of projected benefit payments to determine the total OPEB liability.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Notes to Basic Financial Statements

June 30, 2018 and 2017

(d) Sensitivity of the Net OPEB Liability to Changes in the Discount Rate

The following presents the net OPEB liability of the System, using a discount rate of 6.75% for June 30, 2018 and 7.0% for June 30, 2017, as well as what the System's net OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower or 1-percentage-point higher than the applied rate:

System's Net OPEB Liability			
	1% Decrease (5.75%)	Current Discount Rate (6.75%)	1% Increase (7.75%)
June 30, 2018	\$ 54,184,696	\$ 43,466,407	\$ 34,441,136
	1% Decrease (6.0%)	Current Discount Rate (7.0%)	1% Increase (8.0%)
June 30, 2017	\$ 56,281,320	\$ 45,494,100	\$ 36,509,860

(7) Risk Management

The Trust is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; and errors and omissions, for which the Trust retains the risk of loss. At this time, there are no matters pending against the Trust.

REQUIRED SUPPLEMENTARY INFORMATION (UNAUDITED)

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Required Supplementary Information

Schedule of Changes in the System's Net OPEB Liability and Related Ratios (Unaudited)

Last 3 Fiscal Years

	<u>2018</u>	<u>2017</u>	<u>2016</u>
Total OPEB liability:			
Service cost	\$ 2,604,313	\$ 2,490,519	\$ 2,579,474
Interest	5,747,125	5,959,407	5,589,288
Changes of benefit terms	—	—	—
Differences between expected and actual experience	(841,841)	(2,165,915)	399,912
Changes of assumptions	(878,222)	(5,848,836)	—
Benefit payments	<u>(3,756,945)</u>	<u>(3,412,013)</u>	<u>(2,979,914)</u>
Net change in total OPEB liability	2,874,430	(2,976,838)	5,588,760
Total OPEB liability – beginning	<u>81,344,179</u>	<u>84,321,017</u>	<u>78,732,257</u>
Total OPEB liability – ending (a)	<u>\$ 84,218,609</u>	<u>\$ 81,344,179</u>	<u>\$ 84,321,017</u>
Plan fiduciary net position:			
Contributions – employer	\$ 5,500,000	\$ 5,500,000	\$ 5,500,000
Net investment income	3,212,503	4,212,256	382,144
Benefit payments	(3,756,945)	(3,412,013)	(2,979,914)
Professional fees and services	<u>(53,435)</u>	<u>(15,000)</u>	<u>(12,700)</u>
Net change in plan fiduciary net position	4,902,123	6,285,243	2,889,530
Plan fiduciary net position – beginning	<u>35,850,079</u>	<u>29,564,836</u>	<u>26,675,306</u>
Plan fiduciary net position – ending (b)	<u>\$ 40,752,202</u>	<u>\$ 35,850,079</u>	<u>\$ 29,564,836</u>
System's net OPEB liability – ending (a) - (b)	\$ 43,466,407	\$ 45,494,100	\$ 54,756,181
Plan fiduciary net position as a percentage of the total OPEB liability	48.39%	44.07%	35.06%
Covered payroll	\$ 29,752,583	\$ 29,087,397	\$ 26,506,965
System's net OPEB liability as a percentage of covered-employee payroll	146.09%	156.40%	206.57%

Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

See accompanying independent auditors' report.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Required Supplementary Information

Schedule of System and Other Contributing Entity Contributions (Unaudited)

Last 10 Fiscal Years

	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Actuarially determined contribution	\$ 5,278,747	\$ 5,374,220	\$ 4,782,000	\$ 4,542,000	\$ 4,767,000
Contributions in relation to the actuarially determined contribution:					
System	5,500,000	5,500,000	5,500,000	5,500,000	5,500,000
Other contributing entity	—	—	—	—	756
Total contributions	<u>5,500,000</u>	<u>5,500,000</u>	<u>5,500,000</u>	<u>5,500,000</u>	<u>5,500,756</u>
Contribution deficiency (excess)	<u>\$ (221,253)</u>	<u>\$ (125,780)</u>	<u>\$ (718,000)</u>	<u>\$ (958,000)</u>	<u>\$ (733,756)</u>
 Covered payroll	 \$ 29,752,583	 \$ 29,087,397	 \$ 26,506,965	 \$ 25,556,000	 \$ 26,500,000
 Contributions as a percentage of covered payroll	 18.49 %	 18.91 %	 20.75 %	 21.52 %	 20.76 %

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Required Supplementary Information

Schedule of System and Other Contributing Entity Contributions (Unaudited)

Last 10 Fiscal Years

	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>
Actuarially determined contribution	\$ 5,240,000	\$ 4,853,000	\$ 4,154,000	\$ 3,499,000	\$ 3,585,000
Contributions in relation to the actuarially determined contribution:					
System	5,240,000	4,853,000	4,154,000	3,499,000	3,585,000
Other contributing entity	95,397	97,704	86,248	80,997	92,189
Total contributions	<u>5,335,397</u>	<u>4,950,704</u>	<u>4,240,248</u>	<u>3,579,997</u>	<u>3,677,189</u>
Contribution deficiency (excess)	<u>\$ (95,397)</u>	<u>\$ (97,704)</u>	<u>\$ (86,248)</u>	<u>\$ (80,997)</u>	<u>\$ (92,189)</u>
 Covered payroll	 \$ 25,993,000	 \$ 24,631,000	 \$ 24,021,000	 \$ 23,676,000	 \$ 21,240,000
 Contributions as a percentage of covered payroll	 20.53 %	 20.10 %	 17.65 %	 15.12 %	 17.31 %

See accompanying independent auditors' report.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Notes to Required Supplementary Information

Last 10 Fiscal Years

Changes of benefit terms. Prior to January 1, 2015, retirees who retired on or after July 1, 1985, were required to contribute an amount equal to 10% of the premium paid by the System, plus 100% of the excess, if any, of the premium over the Empire Plan premium. Effective January 1, 2015, retirees who retired on or after July 1, 1985 are required to contribute an amount equal to 12% of the premium paid by the System, plus 100% of the excess, if any, of the premium over the Empire Plan premium.

Effective January 1, 2011 the annual maximum for retiree contributions was increased from \$1,600 to \$1,700. This limit was increased to \$1,800 effective January 1, 2012. Effective January 1, 2015, the annual limit for retiree contributions is determined based on the retiree's salary at retirement in accordance with the table below:

Salary	Effective Date			
	1/1/2015	1/1/2016	1/1/2017	1/1/2018
Up to \$40,000	\$ 1,600	\$ 1,700	\$ 1,825	\$ 1,950
40,001 - 60,000	1,800	1,900	2,025	2,150
60,001 - 90,000	2,000	2,100	2,250	2,375
90,000 and over	2,150	2,250	2,425	2,625

Changes of assumptions. Actuarial assumptions are revised as appropriate to more closely reflect actual, as well as anticipated future experience. Significant assumption changes over the last 10 fiscal years are outlined below.

Mortality rates generally follow those used for New York State and Local Employees' Retirement System (ERS) participants from the following reports:

- For NYSTRS actuarial valuations prior to 2015 "Development of Recommended Actuarial Assumptions for New York State/SUNY GASB 45 Valuation – "Participating Employer Version"
- Starting with the 2015 NYSTRS actuarial valuation NYS/SUNY "Development of Recommended Actuarial Assumptions Participating Agency Version"

Prior to the 2016 actuarial valuation, plan liabilities were determined using retiree premiums. This was changed starting with the 2016 actuarial valuation to determine plan liabilities using per capita health costs.

The plan's investment rate of return of 6.75% is effective with the 2017 actuarial valuation. The investment rate of return of 7.00% was effective with the 2016 valuation. Prior to the 2016 actuarial valuation, the plan's investment rate of return assumption was 8.00%.

Changes of methods. Prior to the 2016 actuarial valuation, the actuarial cost method was Entry Age Normal (Level Dollar) with the unfunded actuarial accrued liability amortized over an open 30 year period as a level percent of pay. Effective with the 2016 actuarial valuation, the actuarial cost method is Entry Age Normal (Level Percentage of Pay) with the unfunded actuarial accrued liability amortized over a closed 30 year period as a level percent of pay.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Notes to Required Supplementary Information

Last 10 Fiscal Years

The payroll increase assumption was 5.00% prior to the 2010 actuarial valuation, 4.00% for the 2010 through 2012 actuarial valuations, 3.36% for the 2013 through 2015 actuarial valuations, and 3.00% starting with the 2016 actuarial valuation.

Method and assumptions used in the calculations of actuarially determined contributions. The actuarially determined contributions are calculated as of June 30th of the preceding year. Unless otherwise noted above the following actuarial methods and assumptions were used for the latest actuarially determined contribution:

Actuarial cost method	Entry Age Normal (Level Percentage of Payroll)
Amortization method	30 Years, Closed, Level Percent of Payroll
Remaining amortization period	29 Years as of July 1, 2017
Asset valuation method	Market Value as of the Measurement Date
Investment rate of return	6.75%
Payroll increase rate	3.0%
Salary increase rate	Varies by service from 3% to 8%
Healthcare cost trend rates:	
Non-Medicare	7.50% graded to 4.0% over 12 years
Medicare	8.00% graded to 4.0% over 14 years
Retiree premium	7.55% graded to 4.0% over 14 years
Pre-retirement mortality	Mortality rates are based on those used in the NYS/SUNY "Development of Recommended Actuarial Assumptions Participating Agency Version" dated December 2017.
Post-retirement mortality	Mortality rates are based on those used in the NYS/SUNY "Development of Recommended Actuarial Assumptions Participating Agency Version" date December 2017. These rates were adjusted to reflect that the System's retirees are while collar and then projected generationally from 2014 with Scale MP-2014.

**NEW YORK STATE TEACHERS' RETIREMENT SYSTEM
RETIRED EMPLOYEE HEALTH BENEFITS TRUST**

Required Supplementary Information
Schedule of Investment Returns (Unaudited)
Last 3 Fiscal Years

	<u>2018</u>	<u>2017</u>	<u>2016</u>
Annual money-weighted rate of return, net of investment expense	8.8 %	13.1 %	1.3 %

Schedule is intended to show information for 10 years. Additional years will be displayed as they became available.

See accompanying independent auditors' report.