ESSEX REGIONAL

Retirement System
Audit Report
January 1, 2015 - December 31, 2019

PUBLIC EMPLOYEE RETIREMENT ADMINISTRATION COMMISSION
COMMONWEALTH OF MASSACHUSETTS

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April 5, 2021

The Public Employee Retirement Administration Commission (PERAC) has completed a review of the audits of the Essex Regional Retirement System (ERRS) conducted by the firm of Powers & Sullivan, LLC, Certified Public Accountants. Powers & Sullivan conducted these audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits in *Government Auditing Standards*, issued by the Comptroller General of the United States. The audits covered the period from January 1, 2015 to December 31, 2019.

We conducted an inspection of the work papers prepared by Powers & Sullivan. We determined that the audits were conducted in a competent, professional manner and the work papers demonstrated that audit tests and procedures were performed in sufficient detail to allow us to accept the final audit reports as issued.

We identified specific differences between these financial audits designed to provide an opinion on financial statements and our compliance audits performed in accordance with the accounting and management standards established by PERAC in regulation 840 CMR 25.00 and in compliance with the provisions specified in PERAC Memo #18/2019.

Accordingly, we supplemented the field work conducted in the audits by Powers & Sullivan with certain limited procedures designed to provide additional assurance that the accounting and management standards established by PERAC were adhered to and complied with. The specific objectives of our review were to determine: 1) that the Board is exercising appropriate fiduciary oversight, 2) that cash balances are accurately stated, 3) that procurements on non-investment contracted providers complied with 23B and that fees paid were in accordance with contracts, 4) that travel expenses were properly documented and accounted for, 5) that retirement contributions are accurately deducted, 6) that retirement allowances were correctly calculated, and 7) that required member documentation is maintained.

To achieve these objectives, we inspected certain records of the Essex Regional Retirement Board in the above areas. Specifically, we reviewed the minutes of the Board meetings for compliance with fiduciary oversight, verified cash balances, examined a sample of non-investment procurements and recalculated the fees charged. We tested a sample of travel expenses for Board approvals, supporting documentation and proper accounting. We tested the payroll records of a sample of active members to confirm that the correct percentage of regular compensation is being deducted, including the additional two percent over $30,000. We tested a sample of members who retired during our audit period to verify that their retirement allowance was calculated in accordance with the statute. We also reviewed a sample of member files for accuracy and completeness.

In our opinion, the financial records are being maintained and the management functions are being performed in conformity with the standards established by PERAC.

It should be noted that the financial statements included in this audit report were based on the work performed by Powers & Sullivan and the tests conducted for the periods referenced in their opinions. These audits were not performed by employees or representatives of PERAC. It should also be noted that the opinions expressed in these audit reports were based on the laws and regulations in effect at the time.

The financial statements and footnotes presented in this report were limited to the express results as of and for the years ended December 31, 2019, December 31, 2018, December 31, 2017, December 31, 2016 and December 31, 2015.

In closing, I wish to acknowledge the work of Powers & Sullivan, who conducted these examinations, the PERAC auditors who conducted limited procedures to supplement the field work, and express my appreciation to the Essex Regional Retirement Board and staff for their courtesy and cooperation.

Sincerely,

John W. Parsons, Esq.
Executive Director

SUPPLEMENTARY INFORMATION

SCHEDULE OF ALLOCATION OF INVESTMENTS OWNED

(percentages by category)

	AS OF DECEMBER 31, 2019	
	MARKET VALUE	PERCENTAGE OF TOTAL ASSETS
Cash	$2,605,385	0.5%
Fixed Income Securities	1,189	0.0%
Pooled Alternative Investment Funds	6,827,074	1.3%
Pooled Real Estate Funds	36,945	0.0%
PRIT Cash Fund	1,004,066	0.2%
PRIT Core Fund	510,315,603	98.0%
Grand Total	$520,790,262	100.0%

For the year ending December 31, 2019, the rate of return for the investments of the Essex Regional Retirement System was 16.49%. For the five-year period ending December 31, 2019, the rate of return for the investments of the Essex Regional Retirement System averaged 8.05%. For the 35-year period ending December 31, 2019, since PERAC began evaluating the returns of the retirement systems, the rate of return on the investments of the Essex Regional Retirement System was 8.81%.

The composite rate of return for all retirement systems for the year ending December 31, 2019 was 16.90%. For the five-year period ending December 31, 2019, the composite rate of return for the investments of all retirement systems averaged 7.95%. For the 35-year period ending December 31, 2019, since PERAC began evaluating the returns of the retirement systems, the composite rate of return on the investments of all retirement systems averaged 9.22%.

SUPPLEMENTARY INFORMATION (Continued)

ADMINISTRATION OF THE SYSTEM

The System is administered by a five-person Board of Retirement. One member shall be appointed by the chief administrative officers of the member units, a second member appointed by the Advisory Council, a third and fourth member who shall be elected by the members in or retired from service of such system, and a fifth member appointed by the other four board members.

Appointed Member:	Andrew Sheehan	Term Expires:	12/01/23
Appointed Member:	Kevin A. Merz	Term Expires:	12/01/21
Elected Member:	Susan J. Yaskell	Term Expires:	12/01/22
Elected Member:	H. Joseph Maney, Chairman	Term Expires:	12/01/22
Appointed Member:	Vincent R. Malgeri	Term Expires:	12/12/25

The Board members are required to meet at least once a month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the system. The board must annually file a financial statement of condition for the system with the Executive Director of PERAC.

The investment of the system's funds is the responsibility of the Board. All retirement allowances must be approved by the Retirement Board. The PERAC Actuary performs verification prior to payment, unless the system has obtained a waiver for superannuation calculations allowing them to bypass this requirement. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by two persons designated by the Board.

Retirement board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. Fidelity insurance is the only required policy coverage under Ch. 32 §21 and §23 as well as 840 CMR 17.01. The policy is designed to cover specific intentional acts such as theft, fraud or embezzlement and also specify who commits such acts, most commonly employees of the system. This coverage reimburses the system for the losses it suffers as a result of its employees' actions. It does not insure the employees for their illegal acts. Statutorily required coverage is provided by the current fidelity insurance policy to a limit of $1,000,000 with a $10,000 deductible issued through Travelers Casualty and Surety Company. The system also has Fiduciary coverage to a limit of $50,000,000 under a blanket policy issued through the Massachusetts Association of Contributory Retirement Systems.

BOARD REGULATIONS

The Essex Regional Retirement System has adopted Supplemental Regulations which are available on the PERAC website at https://www.mass.gov/essex-regional-retirement-board-regulations.

SUPPLEMENTARY INFORMATION (Continued)

ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Segal Consulting as of January 1, 2020.

The actuarial liability for active members was	$404,422,163
The actuarial liability for vested terminated members was	15,241,999
The actuarial liability for non-vested terminated members was	6,025,575
The actuarial liability for retired members was	520,189,115
The total actuarial liability was	$945,878,852
System assets as of that date were (actuarial value)	508,759,357
The unfunded actuarial liability was	$437,119,495
The ratio of system's assets to total actuarial liability was	53.8%
As of that date the total covered employee payroll was	$144,695,269

The normal cost for employees on that date was	10.2% of payroll
The normal cost for the employer including administrative expense was	5.4% of payroll

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	7.30% per annum
Rate of Salary Increase:	Varies by group and service

SCHEDULE OF FUNDING PROGRESS AS OF JANUARY 1, 2020

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded AAL (UAAL) (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a % of Cov. Payroll ((b-a)/c)
1/1/2020	$508,759,357	$945,878,852	$437,119,495	53.8%	$144,695,269	302.1%
1/1/2018	$450,330,846	$843,829,627	$393,498,781	53.4%	$130,781,725	300.9%
1/1/2016	$386,739,098	$745,583,658	$358,844,560	51.9%	$126,928,690	282.7%
1/1/2014	$327,727,973	$676,474,202	$348,746,229	48.4%	$119,733,698	291.3%
1/1/2013	$314,565,925	$619,339,080	$304,773,155	50.8%	$119,292,287	255.5%

* Beginning with 1/1/2016 valuation, we used total payroll as the covered payroll.

MEMBERSHIP EXHIBIT

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Retirement in Past Years										
Superannuation	73	85	64	82	91	96	101	94	88	89
Ordinary Disability	0	0	0	1	1	1	0	0	2	2
Accidental Disability	2	2	2	5	0	1	1	1	1	1
Total Retirements	75	87	66	88	92	98	102	95	91	92
Total Retirees, Beneficiaries and Survivors	1,750	1,717	1,651	1,691	1,712	1,758	1,798	1,825	1,858	1,930
Total Active Members	3,098	3,072	2,850	2,740	2,747	2,739	2,722	2,666	2,774	2,892
Pension Payments										
Superannuation	$19,973,945	$21,040,188	$22,186,140	$22,887,735	$23,536,014	$24,385,981	$25,551,837	$26,806,821	$27,858,890	$29,271,883
Survivor/Beneficiary Payments	1,352,405	1,521,466	1,659,123	1,650,745	1,779,671	1,860,433	1,955,069	2,038,417	1,911,172	1,878,014
Ordinary Disability	197,430	170,025	213,554	262,644	270,462	248,943	274,120	261,853	288,269	312,998
Accidental Disability	2,909,020	2,828,529	3,012,970	3,096,826	3,196,798	3,248,115	3,316,963	3,402,878	3,451,106	3,425,911
Other	743,772	639,386	743,419	800,879	830,971	844,316	852,220	768,174	747,301	689,832
Total Payments for Year	$25,176,572	$26,199,594	$27,815,206	$28,698,829	$29,613,916	$30,587,788	$31,950,209	$33,278,143	$34,256,738	$35,578,638

ESSEX REGIONAL RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2019

ESSEX REGIONAL RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2019

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Financial Section

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Independent Auditor's Report

To the Honorable Essex Retirement Board
Essex Regional Retirement System
Danvers, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of the Essex Regional Retirement System (ERRS) as of and for the year ended December 31, 2019, and the related notes to the financial statements, which collectively comprise the Essex Regional Retirement System's 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 an opinion 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 opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Essex Regional Retirement System as of December 31, 2019, and the results of its operations and changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis; the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Returns 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 Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated July 30, 2020, on our consideration of the Essex Regional Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is 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 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 Essex Regional Retirement System's internal control over financial reporting and compliance.

Restriction on Use

This report is intended solely for the information and use of Essex Regional Retirement System, the Public Employee Retirement Administration Commission and all member units and is not intended to be and should not be used by anyone other than these specified parties.

Powers & Sullivan LLC

July 30, 2020

Management's Discussion and Analysis

As management of the Essex Regional Retirement System, we offer readers of these financial statements this narrative overview and analysis of the financial activities for the year ended December 31, 2019. The System complies with financial reporting requirements issued by the Governmental Accounting Standards Board (GASB).

The GASB is the authoritative standard setting body that provides guidance on how to prepare financial statements in conformity with generally accepted accounting principles (GAAP). Users of these financial statements rely on the GASB to establish consistent reporting standards for all governments in the United States. This consistent application is the only way users can assess the financial condition of a public retirement system compared to others.

Financial Highlights

- The System's assets exceeded its liabilities at the close of the most recent year by $524.6 million (net position).
- The System's net position increased by $68.8 million for the year ended December 31, 2019.
- Total investment income was $73.6 million; investment expenses were $2.5 million; and net investment income was $71.1 million.
- Total contributions were $54.0 million including $36.1 million from employers, $14.3 million from members, and $3.6 million from other contributions.
- Retirement benefits, refunds and transfers amounted to $55.2 million.
- Administrative expenses were $990,000.
- The Total Pension Liability is $945.9 million as of December 31, 2019 while the Net Pension Liability is $421.3 million.
- The Plan fiduciary net position as a percentage of the total pension liability is 55.46%.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the System's fiduciary financial statements. These fiduciary financial statements comprise of four components: 1) management's discussion and analysis, 2) fiduciary financial statements, 3) notes to the financial statements and 4) required supplementary information.

Fiduciary Financial Statements

The *statement of net position* presents information on all assets and deferred outflows less deferred inflows and liabilities with the difference reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position is improving or deteriorating.

The *statement of changes in fiduciary net position* presents information showing how the System's net position changed during the most recent year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, additions and deductions are reported in this statement for some items that will only result in cash flows in future periods.

Notes to the financial statements

The notes provide additional information that is essential to a full understanding of the data provided in the fiduciary financial statements.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Returns 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.

Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of the System's financial position. The System's assets exceeded liabilities by $524.6 million at the close of 2019.

The assets accumulated are held to provide pension benefits for qualified retirees along with active and inactive employees of the member units. At year-end, the System's net position includes investments of $517.2 million, cash of $3.6 million, accounts receivable of $3.9 million, and capital assets of $156,000.

In 2019, the System's contributions totaled $54.0 million while deductions totaled $56.2 million, which resulted in a current deficiency of ($2.3) million. A ($1.0) million deficiency occurred in 2018. For 2019, investment income supported current operations. For 2018, a net investment loss was reported, resulting in a decrease in the System's net position.

The main difference of the increase (decrease) in net position between years was the change in net investment income between years. In 2018 the System experienced a net investment loss of $10.7 million, however in 2019, the System had net investment income of $71.1 million. The annual money weighted rate of return was 16.13% and -2.43% in 2019 and 2018 respectively. Fluctuations in the System's annual investment returns are expected.

The following tables present summarized financial information for the past two years.

	2019	2018
Statement of Fiduciary Net Position		
Assets:		
Cash and cash equivalents……………………………	$ 3,609,452	$ 2,156,881
Investments……………………………………………	517,180,811	449,147,353
Receivables……………………………………………	3,919,155	4,339,105
Capital assets, net of accumulated depreciation…..	155,719	166,977
Total assets…………………………………………	524,865,137	455,810,316
Liabilities:		
Accounts payable……………………………………	300,933	73,214
Abandoned property…………………………………	1,282	-
Total liabilities………………………………………	302,215	73,214
Net Position Restricted for Pension Benefits……….	$ 524,562,922	$ 455,737,102

Statement of Changes in Fiduciary Net Position	2019	2018
Additions:		
Contributions:		
Member contributions	$ 14,270,165	$ 13,636,998
Employer contributions	36,090,030	33,969,088
Other contributions	3,590,760	4,291,824
Total contributions	53,950,955	51,897,910
Net investment income (loss):		
Total investment income (loss)	73,618,293	(8,233,888)
Less, investment expenses	(2,499,157)	(2,489,505)
Net investment income (loss)	71,119,136	(10,723,393)
Total additions	125,070,091	41,174,517
Deductions:		
Administration	990,011	955,252
Retirement benefits, refunds and transfers	55,254,260	51,956,452
Total deductions	56,244,271	52,911,704
Net increase (decrease) in fiduciary net position	68,825,820	(11,737,187)
Fiduciary net position at beginning of year	455,737,102	467,474,289
Fiduciary net position at end of year	$ 524,562,922	$ 455,737,102

In 2016, the System recognized a contribution from Essex North Shore Agricultural and Technical School District (Essex Tech) as the successor agency to both the Essex Agricultural and Technical High School and the North Shore Vocational Regional School. Legislation requires Essex Tech to reimburse ERRS for the actuarially determined liability associated with the retired members from Essex Agricultural and Technical High School who remain with ERRS. Accordingly, in 2015, PERAC approved a funding schedule for Essex Tech to pay ERRS in equal annual payments of $421,947 through 2033. The $3,335,625 million present value of these payments has been recorded as an intergovernmental receivable at year-end.

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all 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 addressed to the System's Board, 491 Maple Street #202, Danvers, MA 01923.

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STATEMENT OF FIDUCIARY NET POSITION

DECEMBER 31, 2019

Assets		
CURRENT:		
Cash and cash equivalents	$	3,609,452
Investments:		
Investments in Pension Reserve Investment Trust		510,315,603
Pooled alternative investments		6,828,263
Pooled real estate funds		36,945
Total investments		517,180,811
Receivables, net of allowance for uncollectibles:		
Member contributions		553,306
Employer pension appropriation		30,224
Essex Agricultural and Technical High School		155,149
Total receivables		738,679
Total current assets		521,528,942
NONCURRENT:		
Receivables, net of allowance for uncollectibles:		
Essex Agricultural and Technical High School		3,180,476
Capital assets, net of accumulated depreciation		155,719
Total noncurrent assets		3,336,195
Total Assets		524,865,137
Liabilities		
Accounts payable		300,933
Other liabilities		1,282
Total Liabilities		302,215
Net Position Restricted for Pensions	$	524,562,922

See notes to financial statements.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

YEAR ENDED DECEMBER 31, 2019

Additions:		
Contributions:		
Employer pension appropriation	$	36,090,030
Member contributions		14,270,165
Transfers from other systems		1,257,765
3(8)(c) contributions from other systems		1,839,824
Workers' compensation settlements		18,000
Federal grant reimbursements		84,724
State COLA reimbursements		239,253
Members' makeup payments and redeposits		90,179
Interest not refunded		37,326
Retirement benefits - reimbursement of 91A overearnings		23,689
Total contributions		53,950,955
Net investment income:		
Investment income (loss)		73,618,293
Less: investment expense		(2,499,157)
Net investment income (loss)		71,119,136
Total additions		125,070,091
Deductions:		
Administration		990,011
Retirement benefits and refunds		49,373,946
Transfers to other systems		2,469,056
3(8)(c) transfer to other systems		3,400,000
Depreciation		11,258
Total deductions		56,244,271
Net increase (decrease) in fiduciary net position		68,825,820
Fiduciary net position at beginning of year		455,737,102
Fiduciary net position at end of year	$	524,562,922

See notes to financial statements.

NOTE 1 – PLAN DESCRIPTION

Essex Regional Retirement System is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of governmental member units deemed eligible by the Essex Regional Retirement Board (the Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the Plan is mandatory immediately upon the commencement of employment for all non-teaching permanent, full time employees. The Plan is administered by the Essex Regional Retirement System (the System). As of December 31, 2019, the System had 46 participating employers.

Originally instituted in 1937, as part of Essex County government, the Board served as the regional retirement system for Essex County upon the abolition of county government in 1996 and the current system structure was created by special legislation in July 2010 (Chapter 34B, Section 19A of the Massachusetts General Laws). The System is governed by a five-member Board who establish the policies under which the System operates. Board members also approve all of the System's financial transactions, including the approval of retirement benefits to members. Board members are appointed or elected as specified by MGL Ch. 34B, Section 19A for terms ranging from 3 to 5 years.

The day-to-day operations of the System are managed by the Executive Director. The legislative body for the System is an Advisory Council consisting of full-time treasurers or other qualified officials of the member units. The Advisory Council meets twice annually and is responsible for supervising and certifying the procedures involved in the election of members to the retirement board.

As of December 31, 2019, the System had 1,930 retirees and beneficiaries, 2,892 active participants and 1,210 inactive participants with a vested right to retirement benefits or to receive a refund of their contributions.

The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The Public Employee Retirement Administration Commission (PERAC) is the state agency responsible for oversight of the Commonwealth's public retirement systems.

Massachusetts Contributory Retirement System benefits are, with certain exceptions, uniform from system to system. The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For persons who became members on or after April 2, 2012, average salary is the average annual rate of regular compensation received during the five consecutive years that produce the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are three classes of membership in the retirement system: group 1, group 2, and group 4. Group 1 consists of general employees, which includes clerical and administrative positions. Group 2 consists of positions that have been specified as hazardous. Lastly, group 4 consists of police officers, firefighters, and other hazardous positions.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of 20 years of service or upon reaching the age of 55 with 10 years of service if hired after 1978 and if classified in groups 1 or 2. A person who became a member on or after April 2, 2012 is eligible for a superannuation retirement allowance upon reaching the age of 60 with 10 years of service if in group 1, 50 years of age with 10 years of service if in group 2, and 55 years of age if hired prior to 1978 or if classified in group 4. Normal retirement for most employees occurs at age 65 (except for certain hazardous duty and public safety positions, whose normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension.

Active members contribute between 5% and 11% of their gross regular compensation. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Public Employee Retirement Administration Commission's (PERAC) actuary. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Any cost-of-living adjustments granted between 1981 and 1997 and any increase in other benefits imposed by the Commonwealth of Massachusetts' state law during those years are borne by the Commonwealth and are deposited into the Pension Fund. Cost-of-living adjustments granted after 1997 must be approved by the System and all costs are borne by the System.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current-year pension assessment.

Administrative expenses, which were previously appropriated from the governmental entities whose employees are members of the System, are now paid from investment income.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent on several factors, including whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veterans' status and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions.

Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements of the Essex Regional Retirement System (ERRS) have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is the recognized standard-setting body for establishing governmental accounting and financial reporting principles.

ERRS is a special-purpose government engaged only in fiduciary activities. Accordingly, the financial statements are reported using the flow of economic resources measurement focus and use the accrual basis of accounting. Under this method, additions are recorded when earned and deductions are recorded when the liabilities are incurred.

Cash and Investments

Cash and cash equivalents are considered to be cash on hand, demand deposits and short-term investments with an original maturity of three months or less from the date of acquisition. Investments are carried at fair value. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market. The fair value of private equities are based on management's valuation of estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values. Real estate assets are reported at fair value utilizing an income approach to valuation along with independent appraisals and estimates by management.

Fair Value Measurements

The System reports required types of financial instruments in accordance with the fair value standards. These standards require an entity to maximize the use of observable inputs (such as quoted prices in active markets) and minimize the use of unobservable inputs (such as appraisals or valuation techniques) to determine fair value. Fair value standards also require the government to classify these financial instruments into a three-level hierarchy, based on the priority of inputs to the valuation technique or in accordance with net asset value practical expedient rules, which allow for either Level 2 or Level 3 depending on lock up and notice periods associated with the underlying funds.

Instruments measured and reported at fair value are classified and disclosed in one of the following categories:

Level 1 – Quoted prices are available in active markets for identical instruments as of the reporting date. Instruments, which are generally included in this category, include actively traded equity and debt securities, U.S. government obligations, and mutual funds with quoted market prices in active markets.

Level 2 – Pricing inputs are other than quoted in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or other valuation methodologies. Certain fixed income securities, primarily corporate bonds, are classified as Level 2 because fair values are estimated using pricing models, matrix pricing, or discounted cash flows.

Level 3 – Pricing inputs are unobservable for the instrument and include situations where there is little, if any, market activity for the instrument. The inputs into the determination of fair value require significant management judgment or estimation.

In some instances, the inputs used to measure fair value may fall into different levels of the fair value hierarchy and is based on the lowest level of input that is significant to the fair value measurement.

Market price is affected by a number of factors, including the type of instrument and the characteristics specific to the instrument. Instruments with readily available active quoted prices generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value. It is reasonably possible that change in values of these instruments will occur in the near term and that such changes could materially affect amounts reported in these financial statements. For more information on the fair value of the System's financial instruments see Note 4.

Accounts Receivable

Accounts receivable consist of member deductions, future appropriations from Essex Technical High School for the unfunded actuarial liability for retirees from Essex Agricultural and Technical School, and pension fund appropriations.

These receivables are considered 100% collectible and therefore do not report an allowance for uncollectibles.

Deferred Outflows/Inflows of Resources

In addition to assets, the statement of fiduciary net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *deferred outflows of resources*, represents a consumption of fiduciary net position that applies to a future period(s) and so will not be recognized as an outflow of resources (deduction) until then. The ERRS did not have any items that qualify for reporting in this category.

In addition to liabilities, the statement of fiduciary net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *deferred inflows of resources*, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (addition) until that time. The ERRS did not have any items that qualify for reporting in this category.

NOTE 3 – PLAN ADMINISTRATION

The System is administered by a five-person Board of Retirement. The first member shall be a chief executive or chief administrative officer of a member town, unit or district belonging to the Essex Regional Retirement System for a term of 3 years. This member shall be chosen by weighted vote of the chief executive or chief administrative officers of member towns, units or districts belonging to the Essex Regional Retirement System. The second member shall be a member of the regional retirement board advisory council, and shall be elected by a majority of those present and voting at a public meeting of the council and shall serve for a term of 3 years. The third and fourth members shall be elected by the members in or retired from service of the Essex County Retirement System from among persons retired under the system and shall serve for a term of 3 years. The fifth member, who shall not be an employee, retiree or official of the retirement system, or of any of its constituent governmental units, shall be chosen by the other 4 members and shall serve for a term of 5 years.

First Member	Alan J. Benson	Term Expires:	12/1/2020
Second Member	Kevin A. Merz	Term Expires:	12/1/2021
Third Member	Susan J. Yaskell	Term Expires:	12/1/2022
Fourth Member	H. Joseph Maney	Term Expires:	12/1/2022
Fifth Member	Vincent R. Malgeri	Term Expires:	12/12/2020

Board members are required to meet at least once a month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the System. The Board must annually file a financial statement of condition for the System with PERAC.

The ERRS Advisory Council consists of the full-time treasurers, elected or appointed, for each town, unit or district within the System. The members of the Advisory Council elect the second member of the Board of Retirement as well as a Chair from among its members. The ERRS Advisory Council is required by statute to meet twice per year, typically in the spring and fall. All ERRS Advisory Council meetings are open, public meetings and are subject to the Commonwealth's Open Meeting Law.

The investment of the System's funds is the responsibility of the Board. Disability retirement allowances must be approved by the Retirement Board and are then submitted to the PERAC Actuary for verification prior to payment. Superannuation retirement allowances are not required to obtain PERAC's verification. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by two persons designated by the Board.

ERRS board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. The MACRS program for ERRS provides $50,000,000 fiduciary protection for Trustees and employees, as well as a $1,000,000 fidelity policy for crime coverage.

NOTE 4 – CASH AND INVESTMENTS

Custodial Credit Risk - Deposits

At December 31, 2019, the carrying amount of the System's deposits totaled $3,609,452; this is comprised of $2,605,446 of cash deposited with banks along with $1,004,006 in the PRIT Cash Fund. Of the $2,605,446, the bank balance totaled $2,889,677, which was covered by Federal Deposit Insurance. The $1,004,006 of the PRIT Cash Fund is uninsured and uncollateralized.

Investments

The System's investments are as follows:

Investment Type		**Fair Value**	
Other Investments:			
PRIT Pooled Funds………………	$	510,315,603	
Pooled Alternative Investments....		6,828,263	
Pooled Real Estate Funds………		36,945	
Total Investments……………….	$	517,180,811	(1)

(1) Subsequent to fiscal year end the market value of the PRIT investment declined by approximately ($18.6 million). Please refer to Note 12 for further information on this matter.

Approximately 99% of the Retirement System's investments are in Pension Reserve Investment Trust (PRIT) Pooled Funds. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board. The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The Administration does not have the ability to control any of the investment decisions relative to its funds in PRIT.

Approximately 1% of the System's funds are invested in pooled alternative investments and pooled real estate funds. The fair values of assets in those funds are based on the quoted values obtained from each pool.

The Administration's annual money-weighted rate of return on pension plan investments was 16.13%. The money–weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested, measured monthly.

Fair Value of Investments

The retiree pension defined benefit plan holds significant amounts of investments that are measured at fair value on a recurring basis. Because investing is a key part of the plan's activities, the plan shows greater disaggregation in its disclosures. The plan chooses a tabular format for disclosing the levels within the fair value hierarchy.

The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles.

The System has the following recurring fair value measurements as of December 31, 2019:

		Fair Value Measurements Using		
Investment Type	12/31/19	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				
Pooled Alternative Investments	$ 6,828,263	$ -	$ -	$ 6,828,263
Pooled Real Estate Funds	36,945	-	-	36,945
Total Investments by fair value level	6,865,208	$ -	$ -	$ 6,865,208
Investments measured at the net asset value (NAV)				
PRIT Investments	510,315,603			
Total Investments	$ 517,180,811			

Pooled Alternative Investments and Pooled Real Estate Funds classified in level 3 are valued using either a discounted cash flow or market comparable companies' technique.

PRIT Investments are valued using the net asset value (NAV) method. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The System does not have the ability to control any of the investment decisions relative to its funds in PRIT.

NOTE 5 – RECEIVABLES

At December 31, 2019, receivables for the System are as follows:

	Gross Amount	Allowance for Uncollectibles	Net Amount
Receivables:			
Member contributions	$ 738,679	$ -	$ 738,679
Essex Agricultural and Technical High School	3,180,476	-	3,180,476
Total	$ 3,919,155	$ -	$ 3,919,155

As more fully described in Note 9, the Essex Agricultural and Technical High School receivable consists of the present value of a stream of future payments to be received from Essex Technical High School (Essex Tech), as the successor agency of Essex Agricultural and Technical School from fiscal year 2017 through fiscal year 2033 for the unfunded actuarial liability for its retirees in the Essex Regional Retirement System.

NOTE 6 – CAPITAL ASSETS

Capital assets are depreciated on a straight-line basis. The estimated useful lives of capital assets are 33 years for buildings and 5 to 20 years for equipment.

The capital assets owned by the System consist of two condominiums in Danvers, Massachusetts that were purchased for the administrative offices of the System. Both units were purchased in fiscal year 2000 for a total of $375,250. Total capital asset activity for the year ended December 31, 2019, was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets being depreciated:				
Buildings	$ 375,250	$ -	$ -	$ 375,250
Equipment	15,580	-	(15,580)	-
Total capital assets being depreciated	390,830	-	(15,580)	375,250
Less accumulated depreciation for:				
Buildings	(208,273)	(11,258)	-	(219,531)
Equipment	(15,580)	-	15,580	-
Total accumulated depreciation	(223,853)	(11,258)	15,580	(219,531)
Total governmental activities capital assets, net	$ 166,977	$ (11,258)	$ -	$ 155,719

NOTE 7 – MEMBERSHIP

The following table represents the System's membership at December 31, 2019:

Active members	2,892
Inactive members entitled to a return of contributions	1,210
Retired, Beneficiary, and Survivor	1,930
Total	6,032

NOTE 8 – ACTUARIAL VALUATION

The total pension liability was determined by an actuarial valuation as of January 1, 2020, using the following actuarial assumptions, applied to all periods included in the measurement that was rolled back to December 31, 2019:

Valuation date…………………………………	January 1, 2020
Salary increases…………………………….	Based on years of service, ranging from 7.50% at 0 years of service decreasing to 3.75% after 5 years of service.
Net investment return/Discount rate……….	7.30% (previously 7.50%)
Wage Inflation rate…………………………	2.75%
Cost of living adjustments…………………	2% of first $14,000 for fiscal 2021 and 3% of first $14,000 thereafter.
Mortality Rates:	
Pre-Retirement………………….	RP-2014 Employee Mortality Table projected generationally with Scale MP-2019.
Healthy Retiree………………….	RP-2014 Healthy Annuitant Mortality Table projected generationally with Scale MP-2019.
Disabled Retiree…………………	RP-2014 Healthy Annuitant Mortality Table set forward two years projected generationally with Scale MP-2019.

Components of the net pension liability as of December 31, 2019 were as follows:

Total pension liability…………………………………………	$	945,878,852
The pension plan's fiduciary net position……………………		(524,562,922)
The net pension liability………………………………………	$	421,315,930
The pension plan's fiduciary net position as a percentage of the total pension liability…………………………………		55.46%

Investment policy. The pension plan's policy in regard to the allocation of invested assets is established by PRIT and the Board. Plan assets are managed on a total return basis with a long-term objective of achieving a fully funded status for the benefits provided through the pension plan.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of 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, adding expected inflation. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before investment expense, used in the derivation of the long-term investment rate of return assumption are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return	Long-Term Expected Asset Allocation
Domestic equity……………………………………	6.15%	21.00%
International developed markets equity………..	6.78%	13.00%
International emerging markets equity………..	8.65%	5.00%
Core fixed income………………………………	1.11%	15.00%
High-yield fixed income………………………….	3.51%	8.00%
Real estate………………………………………	4.33%	10.00%
Commodities………………………………………	4.13%	4.00%
Hedge fund, GTAA, Risk parity…………………	3.19%	11.00%
Private equity……………………………………	9.99%	13.00%
Total Fund Expected Return/Total………….		100.00%

Discount Rate. The discount rates used to measure the Total Pension Liability was 7.30% as of December 31, 2019 and 7.50% as of December 31, 2018. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employer contributions that are intended to fund benefits for the current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service cost for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Plan Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability as of both December 31, 2019 and December 31, 2018.

Sensitivity of the net position liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 7.30%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.30%) or 1-percentage-point higher (8.30%) than the current rate.

	1.0% Decrease (6.30%)	Current Discount Rate (7.30%)	1.0% Increase (8.30%)
Essex Regional Retirement System's net pension liability as of December 31, 2019….	$ 529,830,679	$ 421,315,930	$ 330,102,507

Contributions: Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE 9 – ESSEX AGRICULTURAL AND TECHNICAL HIGH SCHOOL

Chapter 463 of the Acts of 2004 created the Essex North Shore Agricultural and Technical School District (Essex Tech). This legislation established Essex Tech as the successor agency to both the Essex Agricultural and Technical High School and the North Shore Vocational Regional School. Prior to July 1, 2014, the non-teacher employees of the Essex Agricultural and Technical High School were members of ERRS. The legislation required that all active and inactive members be transferred to the Salem Contributory Retirement System. Accordingly, as of June 30, 2015, all active and inactive members of ERRS have been transferred to the Salem Contributory Retirement System. Essex Tech, as the successor agency, is required to reimburse ERRS for the actuarially determined liability associated with the retired members from Essex Agricultural and Technical High School who remain with ERRS. Accordingly, PERAC approved a funding schedule that requires Essex Tech to pay ERRS equal annual assessments of $421,947 through 2033. The $3,335,625 present value of these payments has been recorded as a receivable by ERRS as of December 31, 2019.

NOTE 10 – COMMITMENTS AND CONTINGENCIES

Various legal actions and claims are pending against the System. Litigation is subject to many uncertainties, and the outcome of individual litigated matters is not always predictable. Although the amount of liability, if any, at December 31, 2019 cannot be ascertained, management believes any resulting liability should not materially affect the financial position at December 31, 2019.

NOTE 11 – IMPLEMENTATION OF NEW GASB PRONOUNCEMENTS

In May of 2020, the GASB issued Statement #95, *Postponement of the Effective Dates of Certain Authoritative Guidance*. The objective of this Statement is to provide temporary relief to governments and other stakeholders in light of the COVID-19 pandemic. This Statement postponed the required implementation of many of the upcoming Statements for one year or longer.

There were no GASB pronouncements required to be implemented in 2019 that impacted the System's financial statements.

None of the issued GASB statements that are required to be implemented in future years are anticipated to impact the System's financial statements.

NOTE 12 – SUBSEQUENT EVENTS

Management has evaluated subsequent events through July 30, 2020, which is the date the financial statements were available to be issued.

The System carries its investments at fair (market) value in accordance with Generally Accepted Accounting Principles (GAAP). Market value adjustments are recorded monthly. Subsequent to year end, the System's investments of $517,180,811 in PRIT have declined in value by approximately ($18.6 million). The market value decline is consistent with recent trends in the overall financial securities markets.

In accordance with GAAP, the System has not recorded the losses in its financial statements as the impairments were not known as of December 31, 2019. The System has recorded the losses associated with the investment during 2020.

Required Supplementary Information

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

	December 31, 2014	December 31, 2015	December 31, 2016	December 31, 2017	December 31, 2018	December 31, 2019
Total pension liability:						
Service cost	$ 10,581,511	$ 14,484,797	$ 15,597,356	$ 16,877,715	$ 17,892,023	$ 18,590,358
Interest	54,243,222	56,453,975	57,096,460	60,670,085	62,939,560	65,501,353
Changes in benefit terms	-	-	4,350,523	-	-	(2,382,236)
Differences between expected and actual experience	-	-	(8,590,424)	(49,644)	-	72,274
Changes in assumptions	-	-	20,216,699	23,073,540	-	35,268,329
Benefit payments	(38,353,266)	(39,994,008)	(42,130,566)	(44,959,784)	(46,458,490)	(49,373,946)
Net change in total pension liability	26,471,467	30,944,764	46,540,048	55,611,912	34,373,093	67,676,132
Total pension liability - beginning	684,261,436	710,732,903	741,677,667	788,217,715	843,829,627	878,202,720
Total pension liability - ending (a)	$ 710,732,903	$ 741,677,667	$ 788,217,715	$ 843,829,627	$ 878,202,720	$ 945,878,852
Plan fiduciary net position:						
Employer pension appropriation	$ 26,066,222	$ 27,893,676	$ 29,420,144	$ 31,239,783	$ 33,969,088	$ 36,090,030
Member contributions	12,168,827	12,491,708	12,864,434	13,077,844	13,636,998	14,270,165
Other contributions	3,940,038	7,805,125	4,208,413	3,575,613	4,291,824	3,590,760
Net investment income (loss)	29,322,861	4,103,832	26,406,996	66,258,516	(10,723,393)	71,119,136
Administrative expenses	(922,351)	(934,672)	(961,143)	(981,979)	(955,252)	(990,011)
Retirement benefits and refunds	(38,353,266)	(39,994,008)	(42,130,565)	(44,959,784)	(46,458,490)	(49,373,946)
Other retirement deductions	(5,728,996)	(4,483,236)	(5,202,784)	(3,650,033)	(5,489,442)	(5,869,056)
Depreciation	(14,374)	(14,374)	(14,374)	(15,554)	(8,520)	(11,258)
Net increase (decrease) in fiduciary net position	26,478,961	6,868,051	24,591,121	64,544,406	(11,737,187)	68,825,820
Fiduciary net position - beginning of year	344,991,750	371,470,711	378,338,762	402,929,883	467,474,289	455,737,102
Fiduciary net position - end of year (b)	$ 371,470,711	$ 378,338,762	$ 402,929,883	$ 467,474,289	$ 455,737,102	$ 524,562,922
Net pension liability - ending (a)-(b)	$ 339,262,192	$ 363,338,905	$ 385,287,832	$ 376,355,338	$ 422,465,618	$ 421,315,930
Plan fiduciary net position as a percentage of the total pension liability	52.27%	51.01%	51.12%	55.40%	51.89%	55.46%
Covered payroll	$ 123,190,220	$ 128,258,043	$ 133,089,526	$ 130,743,710	$ 136,111,184	$ 144,695,269
Net pension liability as a percentage of covered payroll	275.40%	283.29%	289.50%	287.86%	310.38%	291.17%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF CONTRIBUTIONS

	December 31, 2014	December 31, 2015	December 31, 2016	December 31, 2017	December 31, 2018	December 31, 2019
Actuarially determined contribution.............	$ 26,066,222	$ 32,050,432	$ 29,420,338	$ 31,614,412	$ 33,969,088	$ 36,150,577
Contributions in relation to the actuarially determined contribution.........................	(26,066,222)	(32,123,557)	(29,463,314)	(31,663,092)	(33,993,920)	(36,174,754)
Contribution deficiency (excess)............	$ -	$ (73,125)	$ (42,976)	$ (48,680)	$ (24,832)	$ (24,177)
Covered payroll.......................................	$ 123,190,220	$ 128,258,043	$ 133,089,526	$ 130,743,710	$ 136,111,184	$ 144,695,269
Contributions as a percentage of covered payroll....................................	21.16%	25.05%	22.14%	24.22%	24.98%	25.00%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF INVESTMENT RETURNS

Year	Annual money-weighted rate of return, net of investment expense
December 31, 2019………………………..	16.13%
December 31, 2018………………………..	-2.43%
December 31, 2017………………………..	17.11%
December 31, 2016………………………..	7.80%
December 31, 2015………………………..	1.04%
December 31, 2014………………………..	8.48%

Note: this schedule is intended to present information for 10 years. Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

NOTE A – CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

The Schedule of Changes in the Net Pension Liability and Related Ratios includes the detailed changes in the System's total pension liability, changes in the System's net position, and the ending net pension liability. It also demonstrates the plan's net position as a percentage of the total pension liability and the net pension liability as a percentage of covered payroll.

NOTE B – CONTRIBUTIONS

Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The total appropriations are payable on July 1 and January 1. Employers may choose to pay the entire appropriation in July at a discounted rate. Accordingly, actual employer contributions may be less than the "total appropriation". The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE C – MONEY-WEIGHTED RATE OF RETURN

The money-weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. A money weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. Inputs to the money weighted rate of return calculation are determined monthly.

NOTE D – CHANGES IN ACTUARIAL ASSUMPTIONS AND PLAN PROVISIONS

Actuarial Assumptions:

The following are the changes in actuarial assumptions effective in the January 1, 2020 valuation:

- The net investment return assumption was lowered from 7.50% to 7.30%
- The mortality assumption for non-disabled participants was changed from the RP-2000 Employee and Healthy Annuitant Mortality Tables projected generationally using Scale BB to the RP-2014 Employee and Healthy Annuitant Mortality Tables projected generationally using Scale MP-2019.
- The morality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward two years projected generationally using Scale BB to the RP-2014 Healthy Annuitant Morality Table set forward two years projected generationally using Scale MP-2019.
- The allowance for net 3(8)(c) payments was changed from a term cost added to the service cost to an estimated liability.

Plan Provisions:

Effective January 1, 2020 the Board approved a 2.0% COLA increase on the first $14,000 of a retirement allowance for fiscal 2021.

Audit of Specific Elements, Accounts and Items of Financial Statements

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Independent Auditor's Report

To the Honorable Essex Retirement Board
Essex Regional Retirement System
Danvers, Massachusetts

We have audited the accompanying schedule of employer allocations of the Essex Regional Retirement System (ERRS) as of and for the year ended December 31, 2019, and the related notes. We have also audited the total for all entities of the rows titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions and total pension expense included in the accompanying schedule of pension amounts by employer of the ERRS Pension Plan as of and for the year ended December 31, 2019, and the related notes.

Management's Responsibility for the Schedules

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

Auditor's Responsibility

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

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

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

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions and total pension expense for the total of all participating entities for the Essex Regional Retirement System as of and for the year ended December 31, 2019, in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the Essex Regional Retirement System as of and for the year ended December 31, 2019, and our report thereon, dated July 30, 2020, expressed an unmodified opinion on those financial statements.

Restriction on Use

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

Powers & Sullivan LLC

July 30, 2020

SCHEDULE OF EMPLOYER ALLOCATIONS

FOR THE YEAR ENDED DECEMBER 31, 2019

Employer	2020 Pension Fund Appropriation	Current Direct E.R.I./CRAB Appropriation	FY2020 Total Appropriation	Remaining Direct E.R.I. Liability	Allocated Net Pension Liability	Share of Net Pension Liability including E.R.I.	Percent of Total Net Pension Liability including E.R.I.
Retirement Board	$ 122,075	$ -	$ 122,075	$ -	$ 1,432,033	$ 1,432,033	0.340%
Town of Boxford	1,339,233	-	1,339,233	-	15,710,208	15,710,208	3.729%
Town of Essex	624,736	-	624,736	-	7,328,622	7,328,622	1.739%
Town of Georgetown	1,752,133	19,880	1,772,013	-	20,553,835	20,553,835	4.878%
Town of Groveland	804,258	8,305	812,563	62,954	9,434,550	9,497,504	2.254%
Town of Hamilton	987,370	-	987,370	-	11,582,591	11,582,591	2.749%
Town of Ipswich	3,762,778	-	3,762,778	-	44,140,209	44,140,209	10.477%
Town of Lynnfield	2,807,722	142,635	2,950,357	-	32,936,686	32,936,686	7.818%
Town of Manchester-by-the-Sea	1,253,062	-	1,253,062	-	14,699,357	14,699,357	3.489%
Town of Merrimac	897,609	7,183	904,792	-	10,529,627	10,529,627	2.499%
Town of Middleton	1,820,352	-	1,820,352	-	21,354,095	21,354,095	5.068%
Town of Nahant	876,067	-	876,067	-	10,276,923	10,276,923	2.439%
Town of Newbury	757,582	-	757,582	-	8,887,005	8,887,005	2.109%
Town of North Andover	5,629,804	-	5,629,804	-	66,041,825	66,041,825	15.675%
Town of Rockport	1,802,399	-	1,802,399	-	21,143,493	21,143,493	5.018%
Town of Rowley	983,780	-	983,780	-	11,540,478	11,540,478	2.739%
Town of Salisbury	1,579,792	-	1,579,792	-	18,532,146	18,532,146	4.399%
Town of Topsfield	1,224,339	-	1,224,339	-	14,362,415	14,362,415	3.409%
Town of Wenham	761,173	-	761,173	-	8,929,130	8,929,130	2.119%
Town of West Newbury	707,316	-	707,316	-	8,297,347	8,297,347	1.969%
East Essex Veterans District	32,314	-	32,314	-	379,067	379,067	0.090%
Byfield Water District	25,133	-	25,133	-	294,829	294,829	0.070%
Lynnfield Center Water District	104,123	-	104,123	-	1,221,441	1,221,441	0.290%
Lynnfield Water District	82,580	-	82,580	-	968,725	968,725	0.230%
NE Massachusetts Mosquito Control District	208,245	-	208,245	-	2,442,870	2,442,870	0.580%
Hamilton-Wenham Regional School	976,599	-	976,599	-	11,456,239	11,456,239	2.719%
Manchester-Essex Regional School	491,890	19,124	511,014	-	5,770,239	5,770,239	1.370%
Masconomet Regional School	696,545	-	696,545	-	8,170,995	8,170,995	1.939%
Pentucket Regional School	1,080,722	6,130	1,086,852	-	12,677,680	12,677,680	3.009%
Triton Regional School	1,087,902	-	1,087,902	-	12,761,907	12,761,907	3.029%
Essex Housing Authority	14,362	-	14,362	-	168,477	168,477	0.040%
Georgetown Housing Authority	61,037	-	61,037	-	716,010	716,010	0.170%
Groveland Housing Authority	25,133	-	25,133	-	294,829	294,829	0.070%
Hamilton Housing Authority	17,952	-	17,952	-	210,590	210,590	0.050%
Ipswich Housing Authority	122,075	-	122,075	-	1,432,031	1,432,031	0.340%
Lynnfield Housing Authority	28,724	-	28,724	-	336,954	336,954	0.080%
Manchester Housing Authority	28,724	-	28,724	-	336,954	336,954	0.080%
Merrimac Housing Authority	10,771	-	10,771	-	126,352	126,352	0.030%
Middleton Housing Authority	17,952	-	17,952	-	210,590	210,590	0.050%
Nahant Housing Authority	10,771	8,943	19,714	67,788	126,352	194,140	0.046%
North Andover Housing Authority	150,798	13,304	164,102	-	1,768,974	1,768,974	0.420%
Rockport Housing Authority	50,266	-	50,266	-	589,658	589,658	0.140%
Rowley Housing Authority	14,362	16,279	30,641	-	168,477	168,477	0.040%
Salisbury Housing Authority	25,133	-	25,133	-	294,829	294,829	0.070%
Topsfield Housing Authority	17,952	-	17,952	-	210,590	210,590	0.050%
Wenham Housing Authority	28,724	-	28,724	-	336,954	336,954	0.080%
Total	$ 35,904,369	$ 241,783	$ 36,146,152	$ 130,742	$ 421,185,188	$ 421,315,930	100.000%

See notes to schedule of employer allocations and schedule of pension amounts by employer.

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	Retirement Board	Town of Boxford	Town of Essex	Town of Georgetown
Net Pension Liability				
Beginning net pension liability	$ 1,604,165	$ 16,041,666	$ 7,260,967	$ 20,577,898
Ending net pension liability	$ 1,432,033	$ 15,710,208	$ 7,328,622	$ 20,553,835
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 197	$ 2,156	$ 1,006	$ 2,822
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	143,128	1,570,196	732,477	2,054,304
Changes in proportion and differences between employer contributions and proportionate share of contributions	40,388	280,985	148,677	230,313
Total Deferred Outflows of Resources	$ 183,713	$ 1,853,337	$ 882,160	$ 2,287,439
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 6,806	$ 74,661	$ 34,829	$ 97,681
Net difference between projected and actual investment earnings on pension plan investments	53,393	585,751	273,246	766,342
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	140,208	243,643	117,862	646,140
Total Deferred Inflows of Resources	$ 200,407	$ 904,055	$ 425,937	$ 1,510,163
Pension Expense				
Proportionate share of plan pension expense	$ 173,451	$ 1,902,857	$ 887,663	$ 2,489,528
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(17,967)	24,186	31,319	(130,254)
Total Employer Pension Expense	$ 155,484	$ 1,927,043	$ 918,982	$ 2,359,274
Contributions				
Statutory required contribution	$ 122,075	$ 1,339,233	$ 624,736	$ 1,772,013
Contribution in relation to statutory required contribution	(122,075)	(1,340,673)	(624,736)	(1,772,013)
Contribution deficiency/(excess)	$ -	$ (1,440)	$ -	$ -
Contributions as a percentage of covered payroll	25.91%	22.99%	27.62%	23.11%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ 4,133	$ 374,805	$ 187,023	$ 372,755
June 30, 2022	4,336	293,583	129,029	168,139
June 30, 2023	6,603	347,529	131,193	245,889
June 30, 2024	(31,766)	(66,635)	8,978	(9,507)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (16,694)	$ 949,282	$ 456,223	$ 777,276
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 1,800,870	$ 19,756,552	$ 9,216,193	$ 25,847,712
Current discount rate (7.30%)	$ 1,432,033	$ 15,710,208	$ 7,328,622	$ 20,553,835
1% increase (8.30%)	$ 1,122,003	$ 12,309,003	$ 5,742,001	$ 16,104,003
Covered Payroll	$ 471,161	$ 5,832,314	$ 2,261,786	$ 7,668,229

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	Town of Groveland	Town of Hamilton	Town of Ipswich	Town of Lynnfield
Net Pension Liability				
Beginning net pension liability	$ 9,394,005	$ 11,651,319	$ 43,270,288	$ 34,542,647
Ending net pension liability	$ 9,497,504	$ 11,582,591	$ 44,140,209	$ 32,936,686
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 1,303	$ 1,590	$ 6,058	$ 4,520
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	949,252	1,157,651	4,411,703	3,291,939
Changes in proportion and differences between employer contributions and proportionate share of contributions	183,590	579,803	716,408	638,864
Total Deferred Outflows of Resources	$ 1,134,145	$ 1,739,044	$ 5,134,169	$ 3,935,323
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 45,136	$ 55,045	$ 209,772	$ 156,528
Net difference between projected and actual investment earnings on pension plan investments	354,112	431,854	1,645,756	1,228,036
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	119,701	361,452	611,812	1,144,611
Total Deferred Inflows of Resources	$ 518,949	$ 848,351	$ 2,467,340	$ 2,529,175
Pension Expense				
Proportionate share of plan pension expense	$ 1,150,363	$ 1,402,909	$ 5,346,374	$ 3,989,383
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(73,524)	(14,444)	(281,571)	(139,826)
Total Employer Pension Expense	$ 1,076,839	$ 1,388,465	$ 5,064,803	$ 3,849,557
Contributions				
Statutory required contribution	$ 812,563	$ 987,370	$ 3,762,778	$ 2,950,357
Contribution in relation to statutory required contribution	(812,563)	(987,370)	(3,771,581)	(2,950,357)
Contribution deficiency/(excess)	$ -	$ -	$ (8,803)	$ -
Contributions as a percentage of covered payroll	24.64%	25.25%	25.77%	27.19%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ 179,101	$ 309,336	$ 724,664	$ 620,855
June 30, 2022	201,480	204,136	748,084	472,091
June 30, 2023	219,531	394,796	1,054,615	589,745
June 30, 2024	15,084	(17,575)	139,466	(276,543)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 615,196	$ 890,693	$ 2,666,829	$ 1,406,148
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 11,943,695	$ 14,565,820	$ 55,509,026	$ 41,419,907
Current discount rate (7.30%)	$ 9,497,504	$ 11,582,591	$ 44,140,209	$ 32,936,686
1% increase (8.30%)	$ 7,441,328	$ 9,075,001	$ 34,584,008	$ 25,806,009
Covered Payroll	$ 3,297,922	$ 3,909,649	$ 14,634,546	$ 10,850,279

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	Town of Manchester-by-the-Sea	Town of Merrimac	Town of Middleton	Town of Nahant
Net Pension Liability				
Beginning net pension liability	$ 14,775,220	$ 9,969,699	$ 22,036,187	$ 10,553,728
Ending net pension liability	$ 14,699,357	$ 10,529,627	$ 21,354,095	$ 10,276,923
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 2,017	$ 1,445	$ 2,931	$ 1,410
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	1,469,164	1,052,410	2,134,288	1,027,153
Changes in proportion and differences between employer contributions and proportionate share of contributions	323,996	486,089	341,924	564,196
Total Deferred Outflows of Resources	$ 1,795,177	$ 1,539,944	$ 2,479,143	$ 1,592,759
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 69,857	$ 50,041	$ 101,483	$ 48,840
Net difference between projected and actual investment earnings on pension plan investments	548,062	392,594	796,182	383,172
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	160,919	228,919	517,592	477,908
Total Deferred Inflows of Resources	$ 778,838	$ 671,554	$ 1,415,257	$ 909,920
Pension Expense				
Proportionate share of plan pension expense	$ 1,780,417	$ 1,275,372	$ 2,586,469	$ 1,244,769
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	162,282	56,338	60,882	34,465
Total Employer Pension Expense	$ 1,942,699	$ 1,331,710	$ 2,647,351	$ 1,279,234
Contributions				
Statutory required contribution	$ 1,253,062	$ 904,792	$ 1,820,352	$ 876,067
Contribution in relation to statutory required contribution	(1,253,062)	(904,792)	(1,821,792)	(876,067)
Contribution deficiency/(excess)	$ -	$ -	$ (1,440)	$ -
Contributions as a percentage of covered payroll	26.43%	24.97%	23.81%	27.18%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ 376,077	$ 293,341	$ 533,675	$ 251,648
June 30, 2022	266,808	216,361	346,795	339,662
June 30, 2023	393,705	260,670	315,971	146,155
June 30, 2024	(20,251)	98,018	(132,555)	(54,626)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 1,016,339	$ 868,390	$ 1,063,886	$ 682,839
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 18,485,345	$ 13,241,653	$ 26,854,087	$ 12,923,862
Current discount rate (7.30%)	$ 14,699,357	$ 10,529,627	$ 21,354,095	$ 10,276,923
1% increase (8.30%)	$ 11,516,998	$ 8,250,000	$ 16,731,008	$ 8,052,005
Covered Payroll	$ 4,741,557	$ 3,623,368	$ 7,651,762	$ 3,223,708

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	Town of Newbury	Town of North Andover	Town of Rockport	Town of Rowley
Net Pension Liability				
Beginning net pension liability	$ 8,780,703	$ 65,601,981	$ 22,162,829	$ 11,777,961
Ending net pension liability	$ 8,887,005	$ 66,041,825	$ 21,143,493	$ 11,540,478
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 1,220	$ 9,063	$ 2,902	$ 1,584
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	888,234	6,600,715	2,113,239	1,153,442
Changes in proportion and differences between employer contributions and proportionate share of contributions	502,737	1,470,946	262,670	169,482
Total Deferred Outflows of Resources	$ 1,392,191	$ 8,080,724	$ 2,378,811	$ 1,324,508
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 42,235	$ 313,857	$ 100,482	$ 54,845
Net difference between projected and actual investment earnings on pension plan investments	331,350	2,462,352	788,330	430,284
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	113,574	107,865	1,388,385	322,778
Total Deferred Inflows of Resources	$ 487,159	$ 2,884,074	$ 2,277,197	$ 807,907
Pension Expense				
Proportionate share of plan pension expense	$ 1,076,415	$ 7,999,143	$ 2,560,949	$ 1,397,813
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	127,898	596,272	(228,608)	9,923
Total Employer Pension Expense	$ 1,204,313	$ 8,595,415	$ 2,332,341	$ 1,407,736
Contributions				
Statutory required contribution	$ 757,582	$ 5,629,804	$ 1,802,399	$ 983,780
Contribution in relation to statutory required contribution	(757,582)	(5,636,824)	(1,805,835)	(983,780)
Contribution deficiency/(excess)	$ -	$ (7,020)	$ (3,436)	$ -
Contributions as a percentage of covered payroll	25.95%	25.19%	25.12%	24.06%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ 297,631	$ 2,006,141	$ 220,303	$ 224,728
June 30, 2022	252,232	1,500,961	35,452	108,533
June 30, 2023	339,894	1,637,948	38,910	231,416
June 30, 2024	15,275	51,600	(193,051)	(48,076)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 905,032	$ 5,196,650	$ 101,614	$ 516,601
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 11,175,955	$ 83,051,654	$ 26,589,242	$ 14,512,860
Current discount rate (7.30%)	$ 8,887,005	$ 66,041,825	$ 21,143,493	$ 11,540,478
1% increase (8.30%)	$ 6,963,000	$ 51,744,001	$ 16,566,001	$ 9,042,005
Covered Payroll	$ 2,918,867	$ 22,380,902	$ 7,190,132	$ 4,088,227

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	Town of Salisbury	Town of Topsfield	Town of Wenham	Town of West Newbury
Net Pension Liability				
Beginning net pension liability	$ 17,519,189	$ 14,141,999	$ 9,033,992	$ 8,316,337
Ending net pension liability	$ 18,532,146	$ 14,362,415	$ 8,929,130	$ 8,297,347
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 2,543	$ 1,971	$ 1,225	$ 1,139
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	1,852,242	1,435,487	892,444	829,299
Changes in proportion and differences between employer contributions and proportionate share of contributions	1,891,648	256,781	167,033	370,365
Total Deferred Outflows of Resources	$ 3,746,433	$ 1,694,239	$ 1,060,702	$ 1,200,803
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 88,072	$ 68,256	$ 42,435	$ 39,432
Net difference between projected and actual investment earnings on pension plan investments	690,966	535,499	332,920	309,364
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	36,417	315,431	105,271	108,046
Total Deferred Inflows of Resources	$ 815,455	$ 919,186	$ 480,626	$ 456,842
Pension Expense				
Proportionate share of plan pension expense	$ 2,244,657	$ 1,739,610	$ 1,081,523	$ 1,004,992
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	522,518	(14,683)	71,792	35,068
Total Employer Pension Expense	$ 2,767,175	$ 1,724,927	$ 1,153,315	$ 1,040,060
Contributions				
Statutory required contribution	$ 1,579,792	$ 1,224,339	$ 761,173	$ 707,316
Contribution in relation to statutory required contribution	(1,579,792)	(1,226,814)	(761,173)	(707,316)
Contribution deficiency/(excess)	$ -	$ (2,475)	$ -	$ -
Contributions as a percentage of covered payroll	25.39%	25.34%	23.92%	26.89%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ 1,035,378	$ 279,896	$ 242,650	$ 261,720
June 30, 2022	849,520	152,014	197,060	206,310
June 30, 2023	871,128	309,169	163,299	283,051
June 30, 2024	174,952	33,974	(22,933)	(7,120)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 2,930,978	$ 775,053	$ 580,076	$ 743,961
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 23,305,313	$ 18,061,620	$ 11,228,930	$ 10,434,424
Current discount rate (7.30%)	$ 18,532,146	$ 14,362,415	$ 8,929,130	$ 8,297,347
1% increase (8.30%)	$ 14,520,001	$ 11,253,002	$ 6,996,005	$ 6,501,000
Covered Payroll	$ 6,221,054	$ 4,841,572	$ 3,181,730	$ 2,629,986

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	East Essex Veterans District	Byfield Water District	Lynnfield Center Water District	Lynnfield Water District
Net Pension Liability				
Beginning net pension liability	$ 379,936	$ 295,502	$ 1,182,017	$ 886,515
Ending net pension liability	$ 379,067	$ 294,829	$ 1,221,441	$ 968,725
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 52	$ 40	$ 168	$ 133
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	37,887	29,467	122,080	96,822
Changes in proportion and differences between employer contributions and proportionate share of contributions	30,416	431	99,426	72,353
Total Deferred Outflows of Resources	$ 68,355	$ 29,938	$ 221,674	$ 169,308
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 1,801	$ 1,401	$ 5,805	$ 4,604
Net difference between projected and actual investment earnings on pension plan investments	14,133	10,993	45,541	36,119
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	26,302	32,261	81,073	29,907
Total Deferred Inflows of Resources	$ 42,236	$ 44,655	$ 132,419	$ 70,630
Pension Expense				
Proportionate share of plan pension expense	$ 45,914	$ 35,711	$ 147,948	$ 117,333
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(6,454)	(27,104)	(18,314)	19,342
Total Employer Pension Expense	$ 39,460	$ 8,607	$ 129,634	$ 136,675
Contributions				
Statutory required contribution	$ 32,314	$ 25,133	$ 104,123	$ 82,580
Contribution in relation to statutory required contribution	(32,314)	(25,133)	(104,123)	(82,580)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	23.77%	25.29%	15.55%	25.54%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ 17,332	$ (20,082)	$ (644)	$ 30,946
June 30, 2022	8,550	(522)	42,916	17,852
June 30, 2023	561	6,139	40,396	35,442
June 30, 2024	(324)	(252)	6,587	14,438
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 26,119	$ (14,717)	$ 89,255	$ 98,678
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 476,700	$ 370,766	$ 1,536,037	$ 1,218,231
Current discount rate (7.30%)	$ 379,067	$ 294,829	$ 1,221,441	$ 968,725
1% increase (8.30%)	$ 297,000	$ 231,000	$ 957,003	$ 758,999
Covered Payroll	$ 135,935	$ 99,377	$ 669,540	$ 323,389

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	NE MA Mosquito Control District	Hamilton-Wenham Regional School	Manchester-Essex Regional School	Masconomet Regional School
Net Pension Liability				
Beginning net pension liability	$ 1,730,812	$ 11,482,455	$ 6,332,236	$ 8,020,835
Ending net pension liability	$ 2,442,870	$ 11,456,239	$ 5,770,239	$ 8,170,995
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 335	$ 1,572	$ 792	$ 1,121
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	244,159	1,145,022	576,721	816,670
Changes in proportion and differences between employer contributions and proportionate share of contributions	551,497	13,253	19,499	548,522
Total Deferred Outflows of Resources	$ 795,991	$ 1,159,847	$ 597,012	$ 1,366,313
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 11,610	$ 54,445	$ 27,422	$ 38,832
Net difference between projected and actual investment earnings on pension plan investments	91,082	427,143	215,142	304,653
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	297,878	247,461	944,494	134,299
Total Deferred Inflows of Resources	$ 400,570	$ 729,049	$ 1,187,058	$ 477,784
Pension Expense				
Proportionate share of plan pension expense	$ 295,883	$ 1,387,612	$ 698,907	$ 989,693
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	39,887	(49,724)	(308,274)	73,067
Total Employer Pension Expense	$ 335,770	$ 1,337,888	$ 390,633	$ 1,062,760
Contributions				
Statutory required contribution	$ 208,245	$ 976,599	$ 511,014	$ 696,545
Contribution in relation to statutory required contribution	(208,245)	(976,599)	(511,014)	(696,545)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	27.86%	24.70%	23.28%	23.42%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ 84,885	$ 163,486	$ (186,418)	$ 262,942
June 30, 2022	90,161	89,952	(177,750)	262,106
June 30, 2023	92,688	187,194	(125,505)	339,956
June 30, 2024	127,687	(9,834)	(100,373)	23,525
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 395,421	$ 430,798	$ (590,046)	$ 888,529
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 3,072,059	$ 14,406,925	$ 7,256,430	$ 10,275,528
Current discount rate (7.30%)	$ 2,442,870	$ 11,456,239	$ 5,770,239	$ 8,170,995
1% increase (8.30%)	$ 1,913,997	$ 8,976,003	$ 4,521,002	$ 6,402,003
Covered Payroll	$ 747,451	$ 3,953,177	$ 2,194,958	$ 2,974,269

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	Pentucket Regional School	Triton Regional School	Essex Housing Authority	Georgetown Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 12,881,509	$ 12,917,765	$ 168,860	$ 717,655
Ending net pension liability	$ 12,677,680	$ 12,761,907	$ 168,477	$ 716,010
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 1,740	$ 1,751	$ 23	$ 98
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	1,267,102	1,275,521	16,839	71,563
Changes in proportion and differences between employer contributions and proportionate share of contributions	35,659	185,288	19,936	31,269
Total Deferred Outflows of Resources	$ 1,304,501	$ 1,462,560	$ 36,798	$ 102,930
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 60,249	$ 60,650	$ 801	$ 3,403
Net difference between projected and actual investment earnings on pension plan investments	472,684	475,824	6,282	26,696
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	1,095,011	981,439	2,390	465
Total Deferred Inflows of Resources	$ 1,627,944	$ 1,517,913	$ 9,473	$ 30,564
Pension Expense				
Proportionate share of plan pension expense	$ 1,535,556	$ 1,545,749	$ 20,407	$ 86,721
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(365,644)	(105,766)	23,099	13,873
Total Employer Pension Expense	$ 1,169,912	$ 1,439,983	$ 43,506	$ 100,594
Contributions				
Statutory required contribution	$ 1,086,852	$ 1,087,902	$ 14,362	$ 61,037
Contribution in relation to statutory required contribution	(1,086,852)	(1,087,465)	(14,362)	(61,037)
Contribution deficiency/(excess)	$ -	$ 437	$ -	$ -
Contributions as a percentage of covered payroll	23.90%	21.96%	13.53%	21.83%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ (160,202)	$ 79,810	$ 13,973	$ 29,917
June 30, 2022	(216,515)	(51,110)	9,941	20,604
June 30, 2023	94,544	(50,109)	3,556	22,460
June 30, 2024	(41,270)	(33,944)	(145)	(615)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (323,443)	$ (55,353)	$ 27,325	$ 72,366
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 15,942,962	$ 16,048,882	$ 211,870	$ 900,427
Current discount rate (7.30%)	$ 12,677,680	$ 12,761,907	$ 168,477	$ 716,010
1% increase (8.30%)	$ 9,933,007	$ 9,998,999	$ 132,002	$ 560,996
Covered Payroll	$ 4,548,129	$ 4,951,582	$ 106,152	$ 279,578

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	Groveland Housing Authority	Hamilton Housing Authority	Ipswich Housing Authority	Lynnfield Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 295,502	$ 211,076	$ 1,519,736	$ 295,502
Ending net pension liability	$ 294,829	$ 210,590	$ 1,432,031	$ 336,954
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 40	$ 29	$ 197	$ 46
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	29,467	21,048	143,128	33,678
Changes in proportion and differences between employer contributions and proportionate share of contributions	312	29,130	40,834	53,117
Total Deferred Outflows of Resources	$ 29,819	$ 50,207	$ 184,159	$ 86,841
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 1,401	$ 1,001	$ 6,806	$ 1,601
Net difference between projected and actual investment earnings on pension plan investments	10,993	7,852	53,393	12,563
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	36,948	7,944	79,101	14,638
Total Deferred Inflows of Resources	$ 49,342	$ 16,797	$ 139,300	$ 28,802
Pension Expense				
Proportionate share of plan pension expense	$ 35,711	$ 25,503	$ 173,451	$ 40,818
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(21,078)	7,482	(23,033)	7,590
Total Employer Pension Expense	$ 14,633	$ 32,985	$ 150,418	$ 48,408
Contributions				
Statutory required contribution	$ 25,133	$ 18,280	$ 124,302	$ 29,248
Contribution in relation to statutory required contribution	(25,133)	(18,280)	(124,302)	(29,248)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	42.51%	28.89%	21.75%	48.77%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ (14,524)	$ 12,431	$ 26,677	$ 15,167
June 30, 2022	(10,886)	16,577	18,367	13,337
June 30, 2023	6,139	4,517	15,867	22,085
June 30, 2024	(252)	(115)	(16,052)	7,450
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (19,523)	$ 33,410	$ 44,859	$ 58,039
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 370,766	$ 264,830	$ 1,800,867	$ 423,740
Current discount rate (7.30%)	$ 294,829	$ 210,590	$ 1,432,031	$ 336,954
1% increase (8.30%)	$ 231,000	$ 164,998	$ 1,122,001	$ 264,005
Covered Payroll	$ 59,129	$ 63,278	$ 571,387	$ 59,966

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	Manchester Housing Authority	Merrimac Housing Authority	Middleton Housing Authority	Nahant Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 337,719	$ 84,430	$ 211,076	$ 196,109
Ending net pension liability	$ 336,954	$ 126,352	$ 210,590	$ 194,140
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 46	$ 17	$ 29	$ 27
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	33,678	12,629	21,048	19,404
Changes in proportion and differences between employer contributions and proportionate share of contributions	22,364	74,630	308	42,545
Total Deferred Outflows of Resources	$ 56,088	$ 87,276	$ 21,385	$ 61,976
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 1,601	$ 600	$ 1,001	$ 923
Net difference between projected and actual investment earnings on pension plan investments	12,563	4,711	7,852	7,238
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	14,827	133	10,887	48,221
Total Deferred Inflows of Resources	$ 28,991	$ 5,444	$ 19,740	$ 56,382
Pension Expense				
Proportionate share of plan pension expense	$ 40,818	$ 15,299	$ 25,503	$ 23,513
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(110)	22,290	(19,690)	(18,485)
Total Employer Pension Expense	$ 40,708	$ 37,589	$ 5,813	$ 5,028
Contributions				
Statutory required contribution	$ 28,724	$ 10,771	$ 17,952	$ 19,714
Contribution in relation to statutory required contribution	(28,724)	(10,771)	(17,952)	(19,714)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	52.38%	21.20%	25.88%	51.29%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ 7,440	$ 25,041	$ (4,628)	$ (7,035)
June 30, 2022	5,600	24,334	2,070	(5,070)
June 30, 2023	14,345	24,930	4,384	17,508
June 30, 2024	(288)	7,527	(181)	191
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 27,097	$ 81,832	$ 1,645	$ 5,594
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 423,740	$ 158,895	$ 264,830	$ 244,143
Current discount rate (7.30%)	$ 336,954	$ 126,352	$ 210,590	$ 194,140
1% increase (8.30%)	$ 264,005	$ 98,997	$ 164,998	$ 152,109
Covered Payroll	$ 54,834	$ 50,818	$ 69,374	$ 38,438

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	North Andover Housing Authority	Rockport Housing Authority	Rowley Housing Authority	Salisbury Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 1,785,851	$ 464,366	$ 168,860	$ 337,719
Ending net pension liability	$ 1,768,974	$ 589,658	$ 168,477	$ 294,829
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 243	$ 81	$ 23	$ 40
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	176,805	58,935	16,839	29,467
Changes in proportion and differences between employer contributions and proportionate share of contributions	19,275	118,044	23,139	1,687
Total Deferred Outflows of Resources	$ 196,323	$ 177,060	$ 40,001	$ 31,194
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 8,407	$ 2,802	$ 801	$ 1,401
Net difference between projected and actual investment earnings on pension plan investments	65,956	21,985	6,282	10,993
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	65,931	150,801	170	67,855
Total Deferred Inflows of Resources	$ 140,294	$ 175,588	$ 7,253	$ 80,249
Pension Expense				
Proportionate share of plan pension expense	$ 214,258	$ 71,420	$ 20,407	$ 35,711
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(35,879)	(16,650)	6,143	(21,505)
Total Employer Pension Expense	$ 178,379	$ 54,770	$ 26,550	$ 14,206
Contributions				
Statutory required contribution	$ 164,102	$ 50,266	$ 31,200	$ 25,592
Contribution in relation to statutory required contribution	(164,102)	(50,266)	(31,200)	(25,592)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	28.21%	20.62%	54.62%	41.18%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ 14,538	$ (13,666)	$ 10,174	$ (20,086)
June 30, 2022	12,978	(35,251)	9,280	(12,541)
June 30, 2023	29,689	27,993	10,071	(8,632)
June 30, 2024	(1,176)	22,396	3,223	(7,796)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 56,029	$ 1,472	$ 32,748	$ (49,055)
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 2,224,594	$ 741,531	$ 211,870	$ 370,766
Current discount rate (7.30%)	$ 1,768,974	$ 589,658	$ 168,477	$ 294,829
1% increase (8.30%)	$ 1,385,997	$ 461,999	$ 132,002	$ 231,000
Covered Payroll	$ 581,623	$ 243,744	$ 57,123	$ 62,152

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2019

	Topsfield Housing Authority	Wenham Housing Authority	West Newbury Housing Authority	Totals
Net Pension Liability				
Beginning net pension liability	$ 211,076	$ 337,719	$ -	$ 422,465,618
Ending net pension liability	$ 210,590	$ 336,954	$ -	$ 421,315,930
Deferred Outflows of Resources				
Differences between expected and actual experience	$ 29	$ 46	$ -	$ 57,820
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	21,048	33,678	-	42,109,472
Changes in proportion and differences between employer contributions and proportionate share of contributions	24,117	25,667	-	11,709,613
Total Deferred Outflows of Resources	$ 45,194	$ 59,391	$ -	$ 53,876,905
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 1,001	$ 1,601	$ -	$ 2,002,263
Net difference between projected and actual investment earnings on pension plan investments	7,852	12,563	-	15,708,653
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	43,037	26,333	1,273	11,709,613
Total Deferred Inflows of Resources	$ 51,890	$ 40,497	$ 1,273	$ 29,420,529
Pension Expense				
Proportionate share of plan pension expense	$ 25,503	$ 40,818	$ -	$ 51,030,824
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(2,006)	1,247	(6,370)	-
Total Employer Pension Expense	$ 23,497	$ 42,065	$ (6,370)	$ 51,030,824
Contributions				
Statutory required contribution	$ 18,280	$ 28,724	$ -	$ 36,150,577
Contribution in relation to statutory required contribution	(18,280)	(28,724)	-	(36,174,754)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ (24,177)
Contributions as a percentage of covered payroll	27.97%	24.81%	N/A	25.00%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2021	$ 2,901	$ 12,736	$ (1,273)	$ 9,177,698
June 30, 2022	(13,999)	6,695	-	6,820,262
June 30, 2023	4,517	(249)	-	8,801,703
June 30, 2024	(115)	(288)	-	(343,287)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (6,696)	$ 18,894	$ (1,273)	$ 24,456,376
Discount Rate Sensitivity				
1% decrease (6.30%)	$ 264,830	$ 423,740	$ -	$ 529,830,679
Current discount rate (7.30%)	$ 210,590	$ 336,954	$ -	$ 421,315,930
1% increase (8.30%)	$ 164,998	$ 264,005	$ -	$ 330,102,507
Covered Payroll	$ 65,352	$ 115,763	$ -	$ 144,695,269

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(concluded)

NOTE I – Schedule of Employer Allocations

Governmental Accounting Standards Board (GASB) Statement #68 requires employers participating in a cost-sharing pension plan to recognize pension liabilities as employees provide services to the government and earn their pension benefits. Employers participating in cost-sharing plans are required to recognize their proportionate share of the plan's collective pension amounts for all benefits provided through the plan including the net pension liability, deferred outflows of resources, deferred inflows of resources, contributions and pension expense.

GASB Statement #68 requires the allocation of the collective pension amounts be consistent with the manner in which contributions to the plan are determined. As permissible under GASB Statement #68, The Schedule of Employer Allocations is used to demonstrate the allocation of Essex Regional Retirement System's collective pension amounts.

Massachusetts General Law (MGL) Chapter 32 Section 22 Paragraph 7c dictates that Massachusetts cost sharing defined benefit pension plans allocate the annual required pension fund appropriation to employer units based on their proportionate share of the aggregate of the annual rates of regular compensation of all members in service of the System who are employees of any government unit at the close of business on the September 30th immediately preceding the fiscal year. Accordingly, the proportionate aggregate rates of regular compensation as of the close of business on September 30, 2018 were applied to allocate the System's fiscal year 2020 pension fund appropriation by member unit.

When a member unit accepts an Early Retirement Incentive Program (E.R.I. or ERIP), PERAC completes an analysis of the costs and liabilities attributable to the additional benefits payable in accordance with the ERIP. The accrued liability for the members who accept the ERIP as retirees including the ERIP less the accrued liability for the members as active employees excluding the ERIP represents the increase in accrued liability due to the ERIP. The net increase is amortized for each member unit accepting the ERIP, and is separately identified in the System's funding schedule. The 2002 ERIP amortization is straight line ending in fiscal 2019, except Nahant Housing which is increasing at 4.5% per year ending in 2028 and Essex Regional Retirement Board which was straight line and ended in fiscal 2012. The 2003 ERI amortization is straight line ending in fiscal 2020, except for Groveland which is increasing at 4.5% per year ending in 2028 and Essex Regional Retirement Board which was straight line and ended in fiscal 2012.

The allocation percentage of the total net pension liability is a blended rate of the following items. (1) The proportionate share of active employer's covered payroll is applied to the fiscal year 2019 pension fund appropriation calculated by the actuary. (2) Current Direct E.R.I. appropriation is a direct current charge calculated by PERAC for only the employers that accepted the ERIP. This direct charge backed out of the total pension fund appropriation to calculate the percentage to be allocated (3) Remaining Direct E.R.I. liability is the future E.R.I. liability associated directly to those employers that accepted the ERIP. This direct liability is added back to those employers once the non-ERIP liability has been allocated.

NOTE II – Schedule of Pension Amounts by Employer

The Schedule of Pension Amounts by Employer presents the net pension liability, the various categories of deferred outflows of resources and deferred inflows of resources, contributions and pension expense for all participating employers including differences between expected and actual economic experience; differences between projected and actual investment earnings, net; and changes of assumptions.

NOTE III – CHANGES IN ACTUARIAL ASSUMPTIONS AND PLAN PROVISIONS

Actuarial Assumptions:

The following are the changes in actuarial assumptions effective in the January 1, 2020 valuation:

- The net investment return assumption was lowered from 7.50% to 7.30%
- The mortality assumption for non-disabled participants was changed from the RP-2000 Employee and Healthy Annuitant Mortality Tables projected generationally using Scale BB to the RP-2014 Employee and Healthy Annuitant Mortality Tables projected generationally using Scale MP-2019.
- The morality assumption for disabled participants was changed from the RP-2000 Healthy Annuitant Mortality Table set forward two years projected generationally using Scale BB to the RP-2014 Healthy Annuitant Morality Table set forward two years projected generationally using Scale MP-2019.
- The allowance for net 3(8)(c) payments was changed from a term cost added to the service cost to an estimated liability.

Plan Provisions:

Effective January 1, 2020 the Board approved a 2.0% COLA increase on the first $14,000 of a retirement allowance for fiscal 2021.

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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 Honorable Essex Retirement Board
Essex Regional Retirement System
Danvers, Massachusetts

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to the financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Essex Regional Retirement System, as of and for the year ended December 31, 2019 and the related notes to the financial statements, which collectively comprise the Essex Regional Retirement System's financial statements, and have issued our report thereon dated July 30, 2020.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Essex Regional Retirement 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 opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Essex Regional Retirement System's internal control. Accordingly, we do not express an opinion on the effectiveness of Essex Regional Retirement 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 Essex Regional Retirement System's financial statements are free of 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.

Powers & Sullivan LLC

July 30, 2020

ESSEX REGIONAL RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2018

ESSEX REGIONAL RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2018

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Financial Section

1

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Independent Auditor's Report

To the Honorable Essex Retirement Board
Essex Regional Retirement System
Danvers, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of the Essex Regional Retirement System (ERRS) as of and for the year ended December 31, 2018, and the related notes to the financial statements, which collectively comprise the Essex Regional Retirement System's 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 an opinion 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 opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Essex Regional Retirement System as of December 31, 2018, and the results of its operations and changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis; the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Returns 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 Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated June 10, 2019, on our consideration of the Essex Regional Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is 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 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 Essex Regional Retirement System's internal control over financial reporting and compliance.

Restriction on Use

This report is intended solely for the information and use of Essex Regional Retirement System, the Public Employee Retirement Administration Commission and all member units and is not intended to be and should not be used by anyone other than these specified parties.

Powers & Sullivan LLC

June 10, 2019

Management's Discussion and Analysis

As management of the Essex Regional Retirement System, we offer readers of these financial statements this narrative overview and analysis of the financial activities for the year ended December 31, 2018. The System complies with financial reporting requirements issued by the Governmental Accounting Standards Board (GASB).

The GASB is the authoritative standard setting body that provides guidance on how to prepare financial statements in conformity with generally accepted accounting principles (GAAP). Users of these financial statements rely on the GASB to establish consistent reporting standards for all governments in the United States. This consistent application is the only way users can assess the financial condition of a public retirement system compared to others.

Financial Highlights

- The System's assets exceeded its liabilities at the close of the most recent year by $455.7 million (net position).
- The System's net position decreased by $11.7 million for the year ended December 31, 2018.
- Total investment loss was $8.2 million; investment expenses were $2.5 million; and net investment loss was $10.7 million.
- Total contributions were $52.0 million including $34.0 million from employers, $13.6 million from members, and $4.3 million from other contributions.
- Retirement benefits, refunds and transfers amounted to $51.9 million.
- Administrative expenses were $955,000.
- The Total Pension Liability is $878.2 million as of December 31, 2018 while the Net Pension Liability is $422.5 million.
- The Plan fiduciary net position as a percentage of the total pension liability is 51.89%.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the System fiduciary financial statements. These fiduciary financial statements comprise of four components: 1) management's discussion and analysis, 2) fiduciary financial statements, 3) notes to the financial statements and 4) required supplementary information.

Fiduciary Financial Statements

The *statement of net position* presents information on all assets and deferred outflows less deferred inflows and liabilities with the difference reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position is improving or deteriorating.

The *statement of changes in fiduciary net position* presents information showing how the system's net position changed during the most recent year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, additions and deductions are reported in this statement for some items that will only result in cash flows in future periods.

Notes to the financial statements

The notes provide additional information that is essential to a full understanding of the data provided in the fiduciary financial statements.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Returns 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.

Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of the System's financial position. The System's assets exceeded liabilities by $455.7 million at the close of 2018.

The assets accumulated are held to provide pension benefits for qualified retirees along with active and inactive employees of the member units. At year-end, the system's net position includes investments of $449.1 million, cash of $2.2 million, accounts receivable of $4.3 million, and capital assets of $167,000.

In 2018, the System's contributions totaled $51.9 million while deductions totaled $52.9 million, which resulted in a current deficiency of ($1.0) million. A ($1.7) million deficiency occurred in 2017. Therefore, for these two years, the system relied on investment income to sustain operations.

The main difference of the increase in net position between years was the change in net investment income between years. Net investment income was $66.3 million in 2017, however in 2018 the System experienced a net investment loss of $10.7 million. The annual money weighted rate of return was -2.43% and 17.11% in 2018 and 2017 respectively. Fluctuations in the system's annual investment returns are expected.

In 2016, the System recognized a contribution from Essex North Shore Agricultural and Technical School District (Essex Tech) as the successor agency to both the Essex Agricultural and Technical High School and the North Shore Vocational Regional School. Legislation requires Essex Tech to reimburse ERRS for the actuarially determined liability associated with the retired members from Essex Agricultural and Technical High School who remain with ERRS. Accordingly, in 2015, PERAC approved a funding schedule for Essex Tech to pay ERRS in equal annual payments of $421,947 through 2033. The $3,479,282 million present value of these payments has been recorded as an intergovernmental receivable at year-end.

The following tables present summarized financial information for the past two years.

	2018	2017
Statement of Fiduciary Net Position		
Assets:		
Cash and cash equivalents..................................	$ 2,156,881	$ 2,894,889
Investments..	449,147,353	460,271,251
Receivables..	4,339,105	4,223,141
Capital assets, net of accumulated depreciation.....	166,977	175,497
Total assets..	455,810,316	467,564,778
Liabilities:		
Accounts payable..	73,214	90,489
Net Position Restricted for Pension Benefits..........	$ 455,737,102	$ 467,474,289

Statement of Changes in Fiduciary Net Position	2018	2017
Additions:		
Contributions:		
Member contributions	$ 13,636,998	$ 13,077,844
Employer contributions	33,969,088	31,239,783
Other contributions	4,291,824	3,575,613
Total contributions	51,897,910	47,893,240
Net investment income (loss):		
Total investment income (loss)	(8,233,888)	68,602,654
Less, investment expenses	(2,489,505)	(2,344,138)
Net investment income (loss)	(10,723,393)	66,258,516
Total additions	41,174,517	114,151,756
Deductions:		
Administration	955,252	981,979
Retirement benefits, refunds and transfers	51,956,452	48,625,371
Total deductions	52,911,704	49,607,350
Net increase (decrease) in fiduciary net position	(11,737,187)	64,544,406
Fiduciary net position at beginning of year	467,474,289	402,929,883
Fiduciary net position at end of year	$ 455,737,102	$ 467,474,289

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all 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 addressed to the System's Board, 491 Maple Street #202, Danvers, MA 01923.

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STATEMENT OF FIDUCIARY NET POSITION

DECEMBER 31, 2018

Assets	
CURRENT:	
Cash and cash equivalents	$ 2,156,881
Investments:	
Investments in Pension Reserve Investment Trust	440,560,329
Pooled alternative investments	8,547,543
Pooled real estate funds	39,481
Total investments	449,147,353
Receivables, net of allowance for uncollectibles:	
Member contributions	762,842
Employer pension appropriation	96,900
Essex Agricultural and Technical High School	143,656
Interest and dividends	81
Total receivables	1,003,479
Total current assets	452,307,713
NONCURRENT:	
Receivables, net of allowance for uncollectibles:	
Essex Agricultural and Technical High School	3,335,626
Capital assets, net of accumulated depreciation	166,977
Total noncurrent assets	3,502,603
Total Assets	455,810,316
Liabilities	
Accounts payable	73,214
Net Position Restricted for Pensions	$ 455,737,102

See notes to financial statements.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

YEAR ENDED DECEMBER 31, 2018

Additions:		
Contributions:		
Employer pension appropriation	$	33,969,088
Member contributions		13,636,998
Transfers from other systems		2,104,173
3(8)(c) contributions from other systems		1,681,210
Workers' compensation settlements		31,698
Federal grant reimbursements		24,832
State COLA reimbursements		268,910
Members' makeup payments and redeposits		160,765
Interest not refunded		16,476
Other revenue		3,760
Total contributions		51,897,910
Net investment income:		
Investment income (loss)		(8,233,888)
Less: investment expense		(2,489,505)
Net investment income (loss)		(10,723,393)
Total additions		41,174,517
Deductions:		
Administration		955,252
Retirement benefits and refunds		46,458,490
Transfers to other systems		2,268,708
3(8)(c) transfer to other systems		3,220,734
Depreciation		8,520
Total deductions		52,911,704
Net increase (decrease) in fiduciary net position		(11,737,187)
Fiduciary net position at beginning of year		467,474,289
Fiduciary net position at end of year	$	455,737,102

See notes to financial statements.

NOTE 1 – PLAN DESCRIPTION

Essex Regional Retirement System is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of governmental member units deemed eligible by the Essex Regional Retirement Board (the Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the Plan is mandatory immediately upon the commencement of employment for all non-teaching permanent, full time employees. The Plan is administered by the Essex Regional Retirement System (the System). As of December 31, 2018, the System had 46 participating employers.

Originally instituted in 1937, as part of Essex County government, the Board served as the regional retirement system for Essex County upon the abolition of county government in 1996 and the current system structure was created by special legislation in July 2010 (Chapter 34B, Section 19A of the Massachusetts General Laws). The System is governed by a five-member Board who establish the policies under which the System operates. Board members also approve all of the System's financial transactions, including the approval of retirement benefits to members. Board members are appointed or elected as specified by MGL Ch. 34B, Section 19A for terms ranging from 3 to 5 years.

The day-to-day operations of the System are managed by the Executive Director. The legislative body for the System is an Advisory Council consisting of full-time treasurers or other qualified officials of the member units. The Advisory Council meets twice annually and is responsible for supervising and certifying the procedures involved in the election of members to the retirement board.

As of December 31, 2018, the System had 1,858 retirees and beneficiaries, 2,774 active participants and 1,212 inactive participants with a vested right to retirement benefits or to receive a refund of their contributions.

The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The Public Employee Retirement Administration Commission (PERAC) is the state agency responsible for oversight of the Commonwealth's public retirement systems.

Massachusetts Contributory Retirement System benefits are, with certain exceptions, uniform from system to system. The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For persons who became members on or after April 2, 2012, average salary is the average annual rate of regular compensation received during the five consecutive years that produce the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are three classes of membership in the retirement system: group 1, group 2, and group 4. Group 1 consists of general employees, which includes clerical and administrative positions. Group 2 consists of positions that have been specified as hazardous. Lastly, group 4 consists of police officers, firefighters, and other hazardous positions.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of 20 years of service or upon reaching the age of 55 with 10 years of service if hired after 1978 and if classified in groups 1 or 2. A person who became a member on or after April 2, 2012 is eligible for a superannuation retirement allowance upon reaching the age of 60 with 10 years of service if in group 1, 50 years of age with 10 years of service if in group 2, and 55 years of age if hired prior to 1978 or if classified in group 4. Normal retirement for most employees occurs at age 65 (except for certain hazardous duty and public safety positions, whose normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension.

Active members contribute between 5% and 11% of their gross regular compensation. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Public Employee Retirement Administration Commission's (PERAC) actuary. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Any cost-of-living adjustments granted between 1981 and 1997 and any increase in other benefits imposed by the Commonwealth of Massachusetts' state law during those years are borne by the Commonwealth and are deposited into the Pension Fund. Cost-of-living adjustments granted after 1997 must be approved by the System and all costs are borne by the System.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current-year pension assessment.

Administrative expenses, which were previously appropriated from the governmental entities whose employees are members of the system, are now paid from investment income.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent on several factors, including whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veterans' status and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions.

Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements of the Essex Regional Retirement System (ERRS) have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is the recognized standard-setting body for establishing governmental accounting and financial reporting principles.

ERRS is a special-purpose government engaged only in fiduciary activities. Accordingly, the financial statements are reported using the flow of economic resources measurement focus and use the accrual basis of accounting. Under this method, additions are recorded when earned and deductions are recorded when the liabilities are incurred.

Cash and Investments

Cash and cash equivalents are considered to be cash on hand, demand deposits and short-term investments with an original maturity of three months or less from the date of acquisition. Investments are carried at fair value. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market. The fair value of private equities are based on management's valuation of estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values. Real estate assets are reported at fair value utilizing an income approach to valuation along with independent appraisals and estimates by management.

Fair Value Measurements

The System reports required types of financial instruments in accordance with the fair value standards. These standards require an entity to maximize the use of observable inputs (such as quoted prices in active markets) and minimize the use of unobservable inputs (such as appraisals or valuation techniques) to determine fair value. Fair value standards also require the government to classify these financial instruments into a three-level hierarchy, based on the priority of inputs to the valuation technique or in accordance with net asset value practical expedient rules, which allow for either Level 2 or Level 3 depending on lock up and notice periods associated with the underlying funds.

Instruments measured and reported at fair value are classified and disclosed in one of the following categories:

Level 1 – Quoted prices are available in active markets for identical instruments as of the reporting date. Instruments, which are generally included in this category, include actively traded equity and debt securities, U.S. government obligations, and mutual funds with quoted market prices in active markets.

Level 2 – Pricing inputs are other than quoted in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or other valuation methodologies. Certain fixed income securities, primarily corporate bonds, are classified as Level 2 because fair values are estimated using pricing models, matrix pricing, or discounted cash flows.

Level 3 – Pricing inputs are unobservable for the instrument and include situations where there is little, if any, market activity for the instrument. The inputs into the determination of fair value require significant management judgment or estimation.

In some instances, the inputs used to measure fair value may fall into different levels of the fair value hierarchy and is based on the lowest level of input that is significant to the fair value measurement.

Market price is affected by a number of factors, including the type of instrument and the characteristics specific to the instrument. Instruments with readily available active quoted prices generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value. It is reasonably possible that change in values of these instruments will occur in the near term and that such changes could materially affect amounts reported in these financial statements. For more information on the fair value of the System's financial instruments see Note 4.

Accounts Receivable

Accounts receivable consist of member deductions, future appropriations from Essex Technical High School for the unfunded actuarial liability for retirees from Essex Agricultural and Technical School, pension fund appropriations, and federal grant reimbursements. These receivables are considered 100% collectible and

therefore do not report an allowance for uncollectibles.

Deferred Outflows/Inflows of Resources

In addition to assets, the statement of fiduciary net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *deferred outflows of resources*, represents a consumption of fiduciary net position that applies to a future period(s) and so will not be recognized as an outflow of resources (deduction) until then. The ERRS did not have any items that qualify for reporting in this category.

In addition to liabilities, the statement of fiduciary net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *deferred inflows of resources,* represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (addition) until that time. The ERRS did not have any items that qualify for reporting in this category.

NOTE 3 – PLAN ADMINISTRATION

The System is administered by a five-person Board of Retirement. The first member shall be a chief executive or chief administrative officer of a member town, unit or district belonging to the Essex Regional Retirement System for a term of 3 years. This member shall be chosen by weighted vote of the chief executive or chief administrative officers of member towns, units or districts belonging to the Essex Regional Retirement System. The second member shall be a member of the regional retirement board advisory council, and shall be elected by a majority of those present and voting at a public meeting of the council and shall serve for a term of 3 years. The third and fourth members shall be elected by the members in or retired from service of the Essex County Retirement System from among persons retired under the system and shall serve for a term of 3 years. The fifth member, who shall not be an employee, retiree or official of the retirement system, or of any of its constituent governmental units, shall be chosen by the other 4 members and shall serve for a term of 5 years.

First Member	Alan J. Benson	Term Expires:	12/1/2020
Second Member	Kevin A. Merz	Term Expires:	12/1/2021
Third Member	Susan J. Yaskell	Term Expires:	12/1/2019
Fourth Member	H. Joseph Maney	Term Expires:	12/1/2019
Fifth Member	Vincent R. Malgeri	Term Expires:	12/12/2020

Board members are required to meet at least once a month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the System. The Board must annually file a financial statement of condition for the System with PERAC.

The ERRS Advisory Council consists of the full-time treasurers, elected or appointed, for each town, unit or district within the System. The members of the Advisory Council elect the second member of the Board of Retirement as well as a Chair from among its members. The ERRS Advisory Council is required by statute to meet twice per year, typically in the spring and fall. All ERRS Advisory Council meetings are open, public meetings and are subject to the Commonwealth's Open Meeting Law.

The investment of the System's funds is the responsibility of the Board. Disability retirement allowances must be approved by the Retirement Board and are then submitted to the PERAC Actuary for verification prior to payment. Superannuation retirement allowances are not required to obtain PERAC's verification. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by two persons designated by the Board.

ERRS board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. The MACRS program for ERRS provides $50,000,000 fiduciary protection for Trustees and employees, as well as a $1,000,000 fidelity policy for crime coverage.

NOTE 4 – CASH AND INVESTMENTS

Custodial Credit Risk - Deposits

At December 31, 2018, the carrying amount of the System's deposits totaled $2,156,881 and the bank balance totaled $3,413,538, which was covered by Federal Depository Insurance.

Investments

The System's investments are as follows:

Investment Type	Fair Value
Other Investments:	
PRIT Pooled Funds………………	$ 440,560,329
Pooled Alternative Investments….	8,547,543
Pooled Real Estate Funds………	39,481
Total Investments……………….	$ 449,147,353

Approximately 98% of the Retirement System's investments are in Pension Reserve Investment Trust (PRIT) Pooled Funds. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board. The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The Administration does not have the ability to control any of the investment decisions relative to its funds in PRIT.

Approximately 2% of the System's funds are invested in pooled alternative investments and pooled real estate funds. The fair values of assets in those funds are based on the quoted values obtained from each pool.

The Administration's annual money-weighted rate of return on pension plan investments was -2.43%. The money–weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested, measured monthly.

Fair Value of Investments

The retiree pension defined benefit plan holds significant amounts of investments that are measured at fair value on a recurring basis. Because investing is a key part of the plan's activities, the plan shows greater disaggregation in its disclosures. The plan chooses a tabular format for disclosing the levels within the fair value hierarchy.

The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles.

The System has the following recurring fair value measurements as of December 31, 2018:

		Fair Value Measurements Using		
Investment Type	12/31/18	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				
Pooled Alternative Investments	$ 8,547,543	$ -	$ -	$ 8,547,543
Pooled Real Estate Funds	39,481	-	-	39,481
Total Investments by fair value level	8,587,024	$ -	$ -	$ 8,587,024
Investments measured at the net asset value (NAV)				
PRIT Investments	440,560,329			
Total Investments	$ 449,147,353			

Pooled Alternative Investments and Pooled Real Estate Funds classified in level 3 are valued using either a discounted cash flow or market comparable companies technique.

PRIT Investments are valued using the net asset value (NAV) method. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The System does not have the ability to control any of the investment decisions relative to its funds in PRIT.

NOTE 5 – RECEIVABLES

At December 31, 2018, receivables for the System are as follows:

	Gross Amount	Allowance for Uncollectibles	Net Amount
Receivables:			
Member contributions	$ 762,842	$ -	$ 762,842
Essex Agricultural and Technical High School	3,479,282	-	3,479,282
Employer pension appropriation	96,900	-	96,900
Interest and dividends	81	-	81
Total	$ 4,339,105	$ -	$ 4,339,105

As more fully described in Note 9, the Essex Agricultural and Technical High School receivable consists of the present value of a stream of future payments to be received from Essex Technical High School (Essex Tech), as the successor agency of Essex Agricultural and Technical School from fiscal year 2017 through fiscal year 2033 for the unfunded actuarial liability for its retirees in the Essex Regional Retirement System.

NOTE 6 – CAPITAL ASSETS

Capital assets are depreciated on a straight-line basis. The estimated useful lives of capital assets are 33 years for buildings and 5 to 20 years for equipment.

The majority of capital assets owned by the System consist of two condominiums in Danvers, Massachusetts that were purchased for the administrative offices of the System. Both units were purchased in fiscal year 2000 for a total of $375,250. Total capital asset activity for the year ended December 31, 2018, was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets being depreciated:				
Buildings	$ 375,250	$ -	$ -	$ 375,250
Equipment	15,580	-	-	15,580
Total capital assets being depreciated	390,830	-	-	390,830
Less accumulated depreciation for:				
Buildings	(199,753)	(8,520)	-	(208,273)
Equipment	(15,580)	-	-	(15,580)
Total accumulated depreciation	(215,333)	(8,520)	-	(223,853)
Total governmental activities capital assets, net	$ 175,497	$ (8,520)	$ -	$ 166,977

NOTE 7 – MEMBERSHIP

The following table represents the System's membership at December 31, 2018:

Active members	2,774
Inactive members entitled to a return of contributions	1,212
Retired, Beneficiary, and Survivor	1,858
Total	5,844

NOTE 8 – ACTUARIAL VALUATION

The total pension liability was determined by an actuarial valuation as of January 1, 2018, using the following actuarial assumptions, applied to all periods included in the measurement that was updated back to December 31, 2018:

Valuation date………………………………	January 1, 2018
Salary increases…………………………….	Based on years of service, ranging from 7.50% at 0 years of service decreasing to 3.75% after 5 years of service.
Net investment return/Discount rate……….	7.50%
Inflation rate…………………………………	2.75%
Cost of living adjustments……………………	3% of first $14,000
Mortality Rates:	
Pre-Retirement………………….	RP-2000 Employee Mortality Table projected generationally with Scale BB.
Healthy Retiree………………….	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB.
Disabled Retiree…………………	RP-2000 Healthy Annuitant Mortality Table, set forward two years projected generationally with Scale BB.

Components of the net pension liability as of December 31, 2018 were as follows:

Total pension liability…………………………………………	$	878,202,720
The pension plan's fiduciary net position…………………		455,737,102
The net pension liability………………………………………	$	422,465,618
The pension plan's fiduciary net position as a percentage of the total pension liability…………………………………		51.89%

Investment policy. The pension plan's policy in regard to the allocation of invested assets is established by PRIT and the Board. Plan assets are managed on a total return basis with a long-term objective of achieving a fully funded status for the benefits provided through the pension plan.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of 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, adding expected inflation. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before investment expense, used in the derivation of the long-term investment rate of return assumption are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return	Long-Term Expected Asset Allocation
Domestic equity……………………………………	6.16%	21.00%
International developed markets equity……….	6.69%	13.00%
International emerging markets equity…………	9.47%	5.00%
Core fixed income………………………………	1.89%	15.00%
High-yield fixed income………………………….	4.00%	8.00%
Real estate………………………………………	4.58%	10.00%
Commodities……………………………………	4.77%	4.00%
Hedge fund, GTAA, Risk parity…………………	3.68%	11.00%
Private equity……………………………………	10.00%	13.00%
Total Fund Expected Return/Total…………..		100.00%

Discount Rate. The discount rates used to measure the Total Pension Liability was 7.50% as of December 31, 2018 and December 31, 2017. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employer contributions that are intended to fund benefits for the current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service cost for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Plan Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability as of both December 31, 2018 and December 31, 2017.

Sensitivity of the net position liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 7.5%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.5%) or 1-percentage-point higher (8.5%) than the current rate.

	1.0% Decrease (6.50%)	Current Discount Rate (7.50%)	1.0% Increase (8.50%)
Essex Regional Retirement System's net pension liability as of December 31, 2018….	$ 522,299,488	$ 422,465,618	$ 338,473,321

Contributions: Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE 9 – ESSEX AGRICULTURAL AND TECHNICAL HIGH SCHOOL

Chapter 463 of the Acts of 2004 created the Essex North Shore Agricultural and Technical School District (Essex Tech). This legislation established Essex Tech as the successor agency to both the Essex Agricultural and Technical High School and the North Shore Vocational Regional School. Prior to July 1, 2014, the non-teacher employees of the Essex Agricultural and Technical High School were members of ERRS. The legislation required that all active and inactive members be transferred to the Salem Contributory Retirement System. Accordingly, as of June 30, 2015, all active and inactive members of ERRS have been transferred to the Salem Contributory Retirement System. Essex Tech, as the successor agency, is required to reimburse ERRS for the actuarially determined liability associated with the retired members from Essex Agricultural and Technical High School who remain with ERRS. Accordingly, PERAC approved a funding schedule that requires Essex Tech to pay ERRS equal annual assessments of $421,947 through 2033. The $3,479,282 present value of these payments has been recorded as a receivable by ERRS as of December 31, 2018.

NOTE 10 – COMMITMENTS AND CONTINGENCIES

Various legal actions and claims are pending against the System. Litigation is subject to many uncertainties, and the outcome of individual litigated matters is not always predictable. Although the amount of liability, if any, at December 31, 2018 cannot be ascertained, management believes any resulting liability should not materially affect the financial position at December 31, 2018.

NOTE 11 – IMPLEMENTATION OF NEW GASB PRONOUNCEMENTS

During 2018, the following GASB pronouncements were implemented:

- The GASB issued Statement #85, *Omnibus 2017*. The financial statements and related notes were not impacted by the implementation of this pronouncement.
- The GASB issued Statement #86, *Certain Debt Extinguishment Issues*. The financial statements and related notes were not impacted by the implementation of this pronouncement.

The following GASB pronouncements will be implemented in the future:

- The GASB issued Statement #83, *Certain Asset Retirement Obligations*, which is required to be implemented in 2019.
- The GASB issued Statement #84, *Fiduciary Activities*, which is required to be implemented in 2019.
- The GASB issued Statement #87, *Leases*, which is required to be implemented in 2020.
- The GASB issued Statement #88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements*, which is required to be implemented in 2019.

- The GASB issued Statement #89, *Accounting for Interest Costs Incurred Before the End of a Construction Period,* which is required to be implemented in 2020.

- The GASB issued Statement #90, *Majority Equity Interests – An Amendment of GASB Statements No. 14 and No. 61,* which is required to be implemented in 2019.

- The GASB issued Statement #91, *Conduit Debt Obligations,* which is required to be implemented in 2021.

Management is currently assessing the impact the implementation of these pronouncements will have on the financial statements.

NOTE 12 – SUBSEQUENT EVENTS

Management has evaluated subsequent events through June 10, 2019, which is the date the financial statements were available to be issued.

Required Supplementary Information

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

	December 31, 2014	December 31, 2015	December 31, 2016	December 31, 2017	December 31, 2018
Total pension liability:					
Service cost	$ 10,581,511	$ 14,484,797	$ 15,597,356	$ 16,877,715	$ 17,892,023
Interest	54,243,222	56,453,975	57,096,460	60,670,085	62,939,560
Changes in benefit terms	-	-	4,350,523	-	-
Differences between expected and actual experience	-	-	(8,590,424)	(49,644)	-
Changes in assumptions	-	-	20,216,699	23,073,540	-
Benefit payments	(38,353,266)	(39,994,008)	(42,130,566)	(44,959,784)	(46,458,490)
Net change in total pension liability	26,471,467	30,944,764	46,540,048	55,611,912	34,373,093
Total pension liability - beginning	684,261,436	710,732,903	741,677,667	788,217,715	843,829,627
Total pension liability - ending (a)	$ 710,732,903	$ 741,677,667	$ 788,217,715	$ 843,829,627	$ 878,202,720
Plan fiduciary net position:					
Employer pension appropriation	$ 26,066,222	$ 27,893,676	$ 29,420,144	$ 31,239,783	$ 33,969,088
Member contributions	12,168,827	12,491,708	12,864,434	13,077,844	13,636,998
Other contributions	3,940,038	7,805,125	4,208,413	3,575,613	4,291,824
Net investment income (loss)	29,322,861	4,103,832	26,406,996	66,258,516	(10,723,393)
Administrative expenses	(922,351)	(934,672)	(961,143)	(981,979)	(955,252)
Retirement benefits and refunds	(38,353,266)	(39,994,008)	(42,130,565)	(44,959,784)	(46,458,490)
Other retirement deductions	(5,728,996)	(4,483,236)	(5,202,784)	(3,650,033)	(5,489,442)
Depreciation	(14,374)	(14,374)	(14,374)	(15,554)	(8,520)
Net increase (decrease) in fiduciary net position	26,478,961	6,868,051	24,591,121	64,544,406	(11,737,187)
Fiduciary net position - beginning of year	344,991,750	371,470,711	378,338,762	402,929,883	467,474,289
Fiduciary net position - end of year (b)	$ 371,470,711	$ 378,338,762	$ 402,929,883	$ 467,474,289	$ 455,737,102
Net pension liability - ending (a)-(b)	**$ 339,262,192**	**$ 363,338,905**	**$ 385,287,832**	**$ 376,355,338**	**$ 422,465,618**
Plan fiduciary net position as a percentage of the total pension liability	52.27%	51.01%	51.12%	55.40%	51.89%
Covered payroll	$ 123,190,220	$ 128,258,043	$ 133,089,526	$ 130,743,710	$ 136,111,184
Net pension liability as a percentage of covered payroll	275.40%	283.29%	289.50%	287.86%	310.38%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF CONTRIBUTIONS

	December 31, 2014	December 31, 2015	December 31, 2016	December 31, 2017	December 31, 2018
Actuarially determined contribution...............	$ 26,066,222	$ 32,050,432	$ 29,420,338	$ 31,614,412	$ 33,969,088
Contributions in relation to the actuarially determined contribution..........................	(26,066,222)	(32,123,557)	(29,463,314)	(31,663,092)	(33,993,920)
Contribution deficiency (excess)............	$ -	$ (73,125)	$ (42,976)	$ (48,680)	$ (24,832)
Covered payroll..	$ 123,190,220	$ 128,258,043	$ 133,089,526	$ 130,743,710	$ 136,111,184
Contributions as a percentage of covered payroll....................................	21.16%	25.05%	22.14%	24.22%	24.98%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF INVESTMENT RETURNS

Year	Annual money-weighted rate of return, net of investment expense
December 31, 2018………………………	-2.43%
December 31, 2017………………………	17.11%
December 31, 2016………………………	7.80%
December 31, 2015………………………	1.04%
December 31, 2014………………………	8.48%

Note: this schedule is intended to present information for 10 years. Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

NOTE A – CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

The Schedule of Changes in the Net Pension Liability and Related Ratios includes the detailed changes in the systems total pension liability, changes in the systems net position, and the ending net pension liability. It also demonstrates the plan's net position as a percentage of the total pension liability and the net pension liability as a percentage of covered payroll.

NOTE B – CONTRIBUTIONS

Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The total appropriations are payable on July 1 and January 1. Employers may choose to pay the entire appropriation in July at a discounted rate. Accordingly, actual employer contributions may be less than the "total appropriation". The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE C – MONEY WEIGHTED RATE OF RETURN

The money weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. A money weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. Inputs to the money weighted rate of return calculation are determined monthly.

NOTE D – CHANGES IN ACTUARIAL ASSUMPTIONS AND PLAN PROVISIONS

Actuarial Assumptions:

None.

Plan Provisions:

None.

Audit of Specific Elements, Accounts and Items of Financial Statements

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Independent Auditor's Report

To the Honorable Essex Retirement Board
Essex Regional Retirement System
Danvers, Massachusetts

We have audited the accompanying schedule of employer allocations of the Essex Regional Retirement System (ERRS) as of and for the year ended December 31, 2018, and the related notes. We have also audited the total for all entities of the rows titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions and total pension expense included in the accompanying schedule of pension amounts by employer of the ERRS Pension Plan as of and for the year ended December 31, 2018, and the related notes.

Management's Responsibility for the Schedules

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

Auditor's Responsibility

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

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

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

Opinions

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

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the Essex Regional Retirement System as of and for the year ended December 31, 2018, and our report thereon, dated June 10, 2019, expressed an unmodified opinion on those financial statements.

Restriction on Use

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

Powers & Sullivan LLC

June 10, 2019

SCHEDULE OF EMPLOYER ALLOCATIONS

FOR THE YEAR ENDED DECEMBER 31, 2018

Employer	2019 Pension Fund Appropriation	Current Direct E.R.I./CRAB Appropriation	FY2019 Total Appropriation	Remaining Direct E.R.I. Liability	Allocated Net Pension Liability	Share of Net Pension Liability including E.R.I.	Percent of Total Net Pension Liability including E.R.I.
Retirement Board	$ 129,352	$ -	$ 129,352	$ -	$ 1,604,165	$ 1,604,165	0.380%
Town of Boxford	1,293,521	-	1,293,521	-	16,041,666	16,041,666	3.797%
Town of Essex	585,489	-	585,489	-	7,260,967	7,260,967	1.719%
Town of Georgetown	1,657,750	79,230	1,736,980	19,234	20,558,664	20,577,898	4.871%
Town of Groveland	752,285	8,096	760,381	64,509	9,329,496	9,394,005	2.224%
Town of Hamilton	939,505	-	939,505	-	11,651,319	11,651,319	2.758%
Town of Ipswich	3,489,104	-	3,489,104	-	43,270,288	43,270,288	10.242%
Town of Lynnfield	2,774,263	145,297	2,919,560	137,493	34,405,154	34,542,647	8.176%
Town of Manchester-by-the-Sea	1,191,401	-	1,191,401	-	14,775,220	14,775,220	3.497%
Town of Merrimac	803,345	45,865	849,210	6,977	9,962,722	9,969,699	2.360%
Town of Middleton	1,776,890	-	1,776,890	-	22,036,187	22,036,187	5.216%
Town of Nahant	851,001	-	851,001	-	10,553,728	10,553,728	2.498%
Town of Newbury	708,033	-	708,033	-	8,780,703	8,780,703	2.078%
Town of North Andover	5,289,822	-	5,289,822	-	65,601,981	65,601,981	15.528%
Town of Rockport	1,787,102	7,966	1,795,068	-	22,162,829	22,162,829	5.246%
Town of Rowley	949,717	-	949,717	-	11,777,961	11,777,961	2.788%
Town of Salisbury	1,412,661	102,302	1,514,963	-	17,519,189	17,519,189	4.147%
Town of Topsfield	1,140,341	-	1,140,341	-	14,141,999	14,141,999	3.347%
Town of Wenham	728,457	-	728,457	-	9,033,992	9,033,992	2.138%
Town of West Newbury	670,589	29,371	699,960	-	8,316,337	8,316,337	1.969%
East Essex Veterans District	30,636	-	30,636	-	379,936	379,936	0.090%
Byfield Water District	23,828	-	23,828	-	295,502	295,502	0.070%
Lynnfield Center Water District	95,312	-	95,312	-	1,182,017	1,182,017	0.280%
Lynnfield Water District	71,484	-	71,484	-	886,515	886,515	0.210%
NE Massachusetts Mosquito Control District	139,564	-	139,564	-	1,730,812	1,730,812	0.410%
Hamilton-Wenham Regional School	925,889	-	925,889	-	11,482,455	11,482,455	2.718%
Manchester-Essex Regional School	510,600	19,124	529,724	-	6,332,236	6,332,236	1.499%
Masconomet Regional School	646,761	-	646,761	-	8,020,835	8,020,835	1.899%
Pentucket Regional School	1,038,221	37,623	1,075,844	5,959	12,875,550	12,881,509	3.049%
Triton Regional School	1,041,625	30,664	1,072,289	-	12,917,765	12,917,765	3.058%
Essex Housing Authority	13,616	4,078	17,694	-	168,860	168,860	0.040%
Georgetown Housing Authority	57,868	-	57,868	-	717,655	717,655	0.170%
Groveland Housing Authority	23,828	-	23,828	-	295,502	295,502	0.070%
Hamilton Housing Authority	17,020	-	17,020	-	211,076	211,076	0.050%
Ipswich Housing Authority	122,544	27,004	149,548	-	1,519,736	1,519,736	0.360%
Lynnfield Housing Authority	23,828	-	23,828	-	295,502	295,502	0.070%
Manchester Housing Authority	27,232	-	27,232	-	337,719	337,719	0.080%
Merrimac Housing Authority	6,808	-	6,808	-	84,430	84,430	0.020%
Middleton Housing Authority	17,020	-	17,020	-	211,076	211,076	0.050%
Nahant Housing Authority	10,212	8,717	18,929	69,464	126,645	196,109	0.046%
North Andover Housing Authority	142,968	13,552	156,520	12,824	1,773,027	1,785,851	0.423%
Rockport Housing Authority	37,444	16,279	53,723	-	464,366	464,366	0.110%
Rowley Housing Authority	13,616	-	13,616	-	168,860	168,860	0.040%
Salisbury Housing Authority	27,232	-	27,232	-	337,719	337,719	0.080%
Topsfield Housing Authority	17,020	-	17,020	-	211,076	211,076	0.050%
Wenham Housing Authority	27,232	6,105	33,337	-	337,719	337,719	0.080%
Total	$ 34,040,036	$ 581,273	$ 34,621,309	$ 316,460	$ 422,149,158	$ 422,465,618	100.000%

See notes to schedule of employer allocations and schedule of pension amounts by employer.

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	Retirement Board	Town of Boxford	Town of Essex	Town of Georgetown
Net Pension Liability				
Beginning net pension liability	$ 1,389,511	$ 13,895,133	$ 6,647,132	$ 19,358,316
Ending net pension liability	$ 1,604,165	$ 16,041,666	$ 7,260,967	$ 20,577,898
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	82,508	825,083	373,459	1,058,398
Changes of assumptions	85,046	850,461	384,946	1,090,954
Changes in proportion and differences between employer contributions and proportionate share of contributions	66,951	382,859	140,339	348,933
Total Deferred Outflows of Resources	$ 234,505	$ 2,058,403	$ 898,744	$ 2,498,285
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 13,914	$ 139,135	$ 62,977	$ 178,479
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	31,744	52,158	152,953	931,206
Total Deferred Inflows of Resources	$ 45,658	$ 191,293	$ 215,930	$ 1,109,685
Pension Expense				
Proportionate share of plan pension expense	$ 184,716	$ 1,847,148	$ 836,078	$ 2,369,482
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	12,631	78,023	16,367	(137,489)
Total Employer Pension Expense	$ 197,347	$ 1,925,171	$ 852,445	$ 2,231,993
Contributions				
Statutory required contribution	$ 126,893	$ 1,268,935	$ 574,361	$ 1,703,966
Contribution in relation to statutory required contribution	(126,893)	(1,270,407)	(574,361)	(1,703,966)
Contribution deficiency/(excess)	$ -	$ (1,472)	$ -	$ -
Contributions as a percentage of covered payroll	25.09%	25.77%	26.22%	25.82%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ 68,193	$ 633,646	$ 267,859	$ 575,251
June 30, 2021	39,689	447,943	176,070	381,541
June 30, 2022	38,955	365,111	118,566	177,104
June 30, 2023	42,010	420,410	120,319	254,704
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 188,847	$ 1,867,110	$ 682,814	$ 1,388,600
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 1,983,250	$ 19,832,511	$ 8,976,824	$ 25,440,712
Current discount rate (7.50%)	$ 1,604,165	$ 16,041,666	$ 7,260,967	$ 20,577,898
1% increase (8.50%)	$ 1,285,234	$ 12,852,350	$ 5,817,382	$ 16,486,714
Covered Payroll	$ 505,815	$ 4,930,080	$ 2,190,580	$ 6,599,842

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	Town of Groveland	Town of Hamilton	Town of Ipswich	Town of Lynnfield
Net Pension Liability				
Beginning net pension liability	$ 8,367,218	$ 9,538,820	$ 38,718,599	$ 30,083,690
Ending net pension liability	$ 9,394,005	$ 11,651,319	$ 43,270,288	$ 34,542,647
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	483,169	599,271	2,225,553	1,776,658
Changes of assumptions	498,030	617,704	2,294,008	1,831,306
Changes in proportion and differences between employer contributions and proportionate share of contributions	134,816	816,762	-	735,772
Total Deferred Outflows of Resources	$ 1,116,015	$ 2,033,737	$ 4,519,561	$ 4,343,736
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 81,477	$ 101,056	$ 375,299	$ 299,601
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	258,565	572,165	1,054,132	132,826
Total Deferred Inflows of Resources	$ 340,042	$ 673,221	$ 1,429,431	$ 432,427
Pension Expense				
Proportionate share of plan pension expense	$ 1,081,691	$ 1,341,616	$ 4,982,441	$ 3,977,478
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(96,346)	(6,306)	(457,004)	109,869
Total Employer Pension Expense	$ 985,345	$ 1,335,310	$ 4,525,437	$ 4,087,347
Contributions				
Statutory required contribution	$ 745,929	$ 921,648	$ 3,422,787	$ 2,864,069
Contribution in relation to statutory required contribution	(745,929)	(921,648)	(3,433,989)	(2,864,069)
Contribution deficiency/(excess)	$ -	$ -	$ (11,202)	$ -
Contributions as a percentage of covered payroll	25.93%	24.50%	24.06%	26.17%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ 229,027	$ 397,252	$ 1,041,715	$ 1,306,296
June 30, 2021	161,100	327,748	562,879	931,565
June 30, 2022	184,201	222,341	591,825	774,341
June 30, 2023	201,645	413,175	893,711	899,107
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 775,973	$ 1,360,516	$ 3,090,130	$ 3,911,309
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 11,613,925	$ 14,404,670	$ 53,495,595	$ 42,705,504
Current discount rate (7.50%)	$ 9,394,005	$ 11,651,319	$ 43,270,288	$ 34,542,647
1% increase (8.50%)	$ 7,526,340	$ 9,334,867	$ 34,667,526	$ 27,675,068
Covered Payroll	$ 2,876,912	$ 3,761,561	$ 14,272,854	$ 10,944,608

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	Town of Manchester-by-the-Sea	Town of Merrimac	Town of Middleton	Town of Nahant
Net Pension Liability				
Beginning net pension liability	$ 12,655,836	$ 9,250,743	$ 19,678,511	$ 9,501,267
Ending net pension liability	$ 14,775,220	$ 9,969,699	$ 22,036,187	$ 10,553,728
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	759,945	512,779	1,133,403	542,818
Changes of assumptions	783,320	528,551	1,168,266	559,514
Changes in proportion and differences between employer contributions and proportionate share of contributions	556,451	96,444	547,537	853,807
Total Deferred Outflows of Resources	$ 2,099,716	$ 1,137,774	$ 2,849,206	$ 1,956,139
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 128,151	$ 86,471	$ 191,128	$ 91,536
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	189,726	315,923	86,541	501,792
Total Deferred Inflows of Resources	$ 317,877	$ 402,394	$ 277,669	$ 593,328
Pension Expense				
Proportionate share of plan pension expense	$ 1,701,321	$ 1,147,982	$ 2,537,398	$ 1,215,229
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	170,556	(50,257)	176,040	80,715
Total Employer Pension Expense	$ 1,871,877	$ 1,097,725	$ 2,713,438	$ 1,295,944
Contributions				
Statutory required contribution	$ 1,168,756	$ 833,069	$ 1,743,117	$ 834,826
Contribution in relation to statutory required contribution	(1,168,756)	(833,069)	(1,744,589)	(834,826)
Contribution deficiency/(excess)	$ -	$ -	$ (1,472)	$ -
Contributions as a percentage of covered payroll	25.58%	26.03%	22.67%	24.36%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ 682,314	$ 295,056	$ 939,290	$ 446,256
June 30, 2021	397,132	182,055	680,289	311,881
June 30, 2022	287,664	108,360	489,928	398,507
June 30, 2023	414,729	149,909	462,030	206,167
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 1,781,839	$ 735,380	$ 2,571,537	$ 1,362,811
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 18,266,787	$ 12,325,662	$ 27,243,611	$ 13,047,705
Current discount rate (7.50%)	$ 14,775,220	$ 9,969,699	$ 22,036,187	$ 10,553,728
1% increase (8.50%)	$ 11,837,691	$ 7,987,578	$ 17,655,073	$ 8,455,493
Covered Payroll	$ 4,569,464	$ 3,200,358	$ 7,695,490	$ 3,426,669

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	Town of Newbury	Town of North Andover	Town of Rockport	Town of Rowley
Net Pension Liability				
Beginning net pension liability	$ 7,135,340	$ 57,570,919	$ 20,887,794	$ 10,327,461
Ending net pension liability	$ 8,780,703	$ 65,601,981	$ 22,162,829	$ 11,777,961
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	451,624	3,374,155	1,139,917	605,785
Changes of assumptions	465,516	3,477,941	1,174,980	624,418
Changes in proportion and differences between employer contributions and proportionate share of contributions	572,226	1,545,160	438,936	300,515
Total Deferred Outflows of Resources	$ 1,489,366	$ 8,397,256	$ 2,753,833	$ 1,530,718
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 76,158	$ 568,990	$ 192,226	$ 102,155
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	167,747	112,869	914,151	250,523
Total Deferred Inflows of Resources	$ 243,905	$ 681,859	$ 1,106,377	$ 352,678
Pension Expense				
Proportionate share of plan pension expense	$ 1,011,072	$ 7,553,864	$ 2,551,980	$ 1,356,197
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	105,380	$ 490,854	(52,792)	48,596
Total Employer Pension Expense	$ 1,116,452	$ 8,044,718	$ 2,499,188	$ 1,404,793
Contributions				
Statutory required contribution	$ 694,576	$ 5,189,280	$ 1,760,950	$ 931,666
Contribution in relation to statutory required contribution	(694,576)	(5,192,935)	(1,765,069)	(931,666)
Contribution deficiency/(excess)	$ -	$ (3,655)	$ (4,119)	$ -
Contributions as a percentage of covered payroll	23.69%	24.18%	25.08%	25.33%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ 409,510	$ 2,763,058	$ 714,845	$ 456,540
June 30, 2021	279,414	1,940,567	435,025	277,446
June 30, 2022	234,743	1,438,847	244,809	160,102
June 30, 2023	321,794	1,572,925	252,777	283,952
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 1,245,461	$ 7,715,397	$ 1,647,456	$ 1,178,040
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 10,855,692	$ 81,104,545	$ 27,400,181	$ 14,561,240
Current discount rate (7.50%)	$ 8,780,703	$ 65,601,981	$ 22,162,829	$ 11,777,961
1% increase (8.50%)	$ 7,034,972	$ 52,559,355	$ 17,756,537	$ 9,436,332
Covered Payroll	$ 2,931,340	$ 21,480,334	$ 7,036,740	$ 3,678,652

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	Town of Salisbury	Town of Topsfield	Town of Wenham	Town of West Newbury
Net Pension Liability				
Beginning net pension liability	$ 14,179,744	$ 12,768,498	$ 8,074,199	$ 6,862,708
Ending net pension liability	$ 17,519,189	$ 14,141,999	$ 9,033,992	$ 8,316,337
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	901,077	727,376	464,652	427,740
Changes of assumptions	928,794	749,749	478,944	440,897
Changes in proportion and differences between employer contributions and proportionate share of contributions	1,591,242	145,521	277,156	506,776
Total Deferred Outflows of Resources	$ 3,421,113	$ 1,622,646	$ 1,220,752	$ 1,375,413
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 151,950	$ 122,659	$ 78,355	$ 72,131
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	163,759	447,237	65,317	207,587
Total Deferred Inflows of Resources	$ 315,709	$ 569,896	$ 143,672	$ 279,718
Pension Expense				
Proportionate share of plan pension expense	$ 2,017,282	$ 1,628,407	$ 1,040,236	$ 957,601
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	332,459	(60,358)	87,449	35,430
Total Employer Pension Expense	$ 2,349,741	$ 1,568,049	$ 1,127,685	$ 993,031
Contributions				
Statutory required contribution	$ 1,486,168	$ 1,118,667	$ 714,611	$ 686,656
Contribution in relation to statutory required contribution	(1,486,168)	(1,121,142)	(714,611)	(686,656)
Contribution deficiency/(excess)	$ -	$ (2,475)	$ -	$ -
Contributions as a percentage of covered payroll	25.99%	24.67%	24.64%	26.43%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ 939,257	$ 429,467	$ 400,352	$ 323,476
June 30, 2021	836,457	240,071	267,396	268,758
June 30, 2022	656,536	113,637	221,357	213,369
June 30, 2023	673,154	269,575	187,975	290,092
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 3,105,404	$ 1,052,750	$ 1,077,080	$ 1,095,695
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 21,659,190	$ 17,483,928	$ 11,168,837	$ 10,281,591
Current discount rate (7.50%)	$ 17,519,189	$ 14,141,999	$ 9,033,992	$ 8,316,337
1% increase (8.50%)	$ 14,036,120	$ 11,330,364	$ 7,237,903	$ 6,662,929
Covered Payroll	$ 5,717,330	$ 4,544,928	$ 2,900,783	$ 2,598,320

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	East Essex Veterans District	Byfield Water District	Lynnfield Center Water District	Lynnfield Water District
Net Pension Liability				
Beginning net pension liability	$ 375,542	$ 262,880	$ 1,013,969	$ 788,641
Ending net pension liability	$ 379,936	$ 295,502	$ 1,182,017	$ 886,515
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	19,542	15,199	60,796	45,597
Changes of assumptions	20,143	15,666	62,666	46,999
Changes in proportion and differences between employer contributions and proportionate share of contributions	50,716	467	108,993	29,680
Total Deferred Outflows of Resources	$ 90,401	$ 31,332	$ 232,455	$ 122,276
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 3,295	$ 2,563	$ 10,252	$ 7,689
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	52,972	59,339	146,861	44,024
Total Deferred Inflows of Resources	$ 56,267	$ 61,902	$ 157,113	$ 51,713
Pension Expense				
Proportionate share of plan pension expense	$ 43,747	$ 34,027	$ 136,106	$ 102,081
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(6,438)	(27,090)	(25,893)	4,118
Total Employer Pension Expense	$ 37,309	$ 6,937	$ 110,213	$ 106,199
Contributions				
Statutory required contribution	$ 30,054	$ 23,375	$ 93,500	$ 70,125
Contribution in relation to statutory required contribution	(30,054)	(23,375)	(93,500)	(70,125)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	25.03%	24.98%	24.65%	24.66%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ 6,722	$ (16,855)	$ 15,048	$ 34,824
June 30, 2021	17,655	(19,832)	(8,194)	14,596
June 30, 2022	8,873	(272)	35,604	1,975
June 30, 2023	884	6,389	32,884	19,168
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 34,134	$ (30,570)	$ 75,342	$ 70,563
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 469,720	$ 365,333	$ 1,461,342	$ 1,096,009
Current discount rate (7.50%)	$ 379,936	$ 295,502	$ 1,182,017	$ 886,515
1% increase (8.50%)	$ 304,399	$ 236,752	$ 947,015	$ 710,263
Covered Payroll	$ 120,065	$ 93,575	$ 379,260	$ 284,388

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	NE MA Mosquito Control District	Hamilton-Wenham Regional School	Manchester-Essex Regional School	Masconomet Regional School
Net Pension Liability				
Beginning net pension liability	$ 1,990,385	$ 10,477,680	$ 6,421,804	$ 6,421,804
Ending net pension liability	$ 1,730,812	$ 11,482,455	$ 6,332,236	$ 8,020,835
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	89,022	590,586	325,691	412,542
Changes of assumptions	91,760	608,751	335,708	425,231
Changes in proportion and differences between employer contributions and proportionate share of contributions	56,617	55,468	13,868	565,026
Total Deferred Outflows of Resources	$ 237,399	$ 1,254,805	$ 675,267	$ 1,402,799
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 15,012	$ 99,591	$ 54,922	$ 69,568
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	411,499	336,911	768,775	228,647
Total Deferred Inflows of Resources	$ 426,511	$ 436,502	$ 823,697	$ 298,215
Pension Expense				
Proportionate share of plan pension expense	$ 199,298	$ 1,322,170	$ 729,139	$ 923,574
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(89,793)	(49,227)	(212,600)	42,888
Total Employer Pension Expense	$ 109,505	$ 1,272,943	$ 516,539	$ 966,462
Contributions				
Statutory required contribution	$ 136,911	$ 908,291	$ 519,656	$ 634,468
Contribution in relation to statutory required contribution	(136,911)	(908,291)	(519,656)	(634,468)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	24.57%	23.54%	28.15%	24.67%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ (29,844)	$ 348,482	$ 6,724	$ 320,699
June 30, 2021	(59,000)	173,205	(73,733)	235,530
June 30, 2022	(49,711)	99,699	(68,114)	235,656
June 30, 2023	(50,557)	196,917	(13,307)	312,699
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (189,112)	$ 818,303	$ (148,430)	$ 1,104,584
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 2,139,824	$ 14,195,902	$ 7,828,622	$ 9,916,258
Current discount rate (7.50%)	$ 1,730,812	$ 11,482,455	$ 6,332,236	$ 8,020,835
1% increase (8.50%)	$ 1,386,702	$ 9,199,576	$ 5,073,295	$ 6,426,177
Covered Payroll	$ 557,198	$ 3,858,732	$ 1,845,976	$ 2,571,786

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	Pentucket Regional School	Triton Regional School	Essex Housing Authority	Georgetown Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 12,208,790	$ 13,022,854	$ 154,080	$ 600,870
Ending net pension liability	$ 12,881,509	$ 12,917,765	$ 168,860	$ 717,655
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	662,544	664,408	8,685	36,912
Changes of assumptions	682,924	684,845	8,952	38,047
Changes in proportion and differences between employer contributions and proportionate share of contributions	131,164	398,821	43,838	45,505
Total Deferred Outflows of Resources	$ 1,476,632	$ 1,748,074	$ 61,475	$ 120,464
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 111,726	$ 112,040	$ 1,465	$ 6,224
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	1,401,460	1,183,011	3,158	672
Total Deferred Inflows of Resources	$ 1,513,186	$ 1,295,051	$ 4,623	$ 6,896
Pension Expense				
Proportionate share of plan pension expense	$ 1,483,266	$ 1,487,443	$ 19,444	$ 82,636
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(334,704)	(82,219)	23,106	13,905
Total Employer Pension Expense	$ 1,148,562	$ 1,405,224	$ 42,550	$ 96,541
Contributions				
Statutory required contribution	$ 1,055,396	$ 1,051,908	$ 17,358	$ 57,868
Contribution in relation to statutory required contribution	(1,055,396)	(1,052,345)	(17,358)	(57,868)
Contribution deficiency/(excess)	$ -	$ (437)	$ -	$ 50
Contributions as a percentage of covered payroll	26.53%	24.67%	54.45%	23.67%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ 111,463	$ 365,203	$ 28,955	$ 38,762
June 30, 2021	(115,119)	116,481	14,116	30,525
June 30, 2022	(172,375)	(15,115)	10,084	21,213
June 30, 2023	139,477	(13,546)	3,697	23,068
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (36,554)	$ 453,023	$ 56,852	$ 113,568
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 15,925,569	$ 15,970,393	$ 208,763	$ 887,246
Current discount rate (7.50%)	$ 12,881,509	$ 12,917,765	$ 168,860	$ 717,655
1% increase (8.50%)	$ 10,320,478	$ 10,349,526	$ 135,288	$ 574,975
Covered Payroll	$ 3,977,694	$ 4,264,850	$ 31,879	$ 244,494

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	Groveland Housing Authority	Hamilton Housing Authority	Ipswich Housing Authority	Lynnfield Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 262,880	$ 187,771	$ 1,377,521	$ 225,328
Ending net pension liability	$ 295,502	$ 211,076	$ 1,519,736	$ 295,502
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	15,199	10,856	78,166	15,199
Changes of assumptions	15,666	11,190	80,570	15,666
Changes in proportion and differences between employer contributions and proportionate share of contributions	288	43,322	59,373	29,634
Total Deferred Outflows of Resources	$ 31,153	$ 65,368	$ 218,109	$ 60,499
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 2,563	$ 1,831	$ 13,181	$ 2,563
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	57,940	14,936	46,248	22,189
Total Deferred Inflows of Resources	$ 60,503	$ 16,767	$ 59,429	$ 24,752
Pension Expense				
Proportionate share of plan pension expense	$ 34,027	$ 24,307	$ 174,992	$ 34,027
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(21,064)	7,428	(8,148)	(138)
Total Employer Pension Expense	$ 12,963	$ 31,735	$ 166,844	$ 33,889
Contributions				
Statutory required contribution	$ 23,375	$ 17,020	$ 149,548	$ 23,375
Contribution in relation to statutory required contribution	(23,375)	(17,020)	(149,548)	(23,375)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	27.35%	26.78%	34.53%	25.12%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ (10,829)	$ 14,739	$ 44,490	$ 10,097
June 30, 2021	(14,274)	12,544	44,617	6,763
June 30, 2022	(10,636)	16,690	35,840	5,169
June 30, 2023	6,389	4,628	33,733	13,718
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (29,350)	$ 48,601	$ 158,680	$ 35,747
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 365,333	$ 260,956	$ 1,878,868	$ 365,333
Current discount rate (7.50%)	$ 295,502	$ 211,076	$ 1,519,736	$ 295,502
1% increase (8.50%)	$ 236,752	$ 169,111	$ 1,217,590	$ 236,752
Covered Payroll	$ 85,481	$ 63,549	$ 433,051	$ 93,050

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	Manchester Housing Authority	Merrimac Housing Authority	Middleton Housing Authority	Nahant Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 262,880	$ -	$ 187,771	$ 110,445
Ending net pension liability	$ 337,719	$ 84,430	$ 211,076	$ 196,109
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	17,370	4,343	10,856	10,087
Changes of assumptions	17,904	4,476	11,190	10,397
Changes in proportion and differences between employer contributions and proportionate share of contributions	29,682	58,733	335	53,612
Total Deferred Outflows of Resources	$ 64,956	$ 67,552	$ 22,381	$ 74,096
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 2,929	$ 732	$ 1,831	$ 1,701
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	22,181	92	30,558	79,518
Total Deferred Inflows of Resources	$ 25,110	$ 824	$ 32,389	$ 81,219
Pension Expense				
Proportionate share of plan pension expense	$ 38,889	$ 9,721	$ 24,307	$ 22,581
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(92)	14,660	(19,680)	(18,834)
Total Employer Pension Expense	$ 38,797	$ 24,381	$ 4,627	$ 3,747
Contributions				
Statutory required contribution	$ 26,714	$ 6,679	$ 16,697	$ 18,569
Contribution in relation to statutory required contribution	(26,714)	(6,679)	(16,697)	(18,569)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	19.78%	17.57%	23.12%	46.49%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ 11,605	$ 17,584	$ (12,369)	$ (12,042)
June 30, 2021	7,725	16,563	(4,449)	(7,193)
June 30, 2022	5,886	16,092	2,249	(5,237)
June 30, 2023	14,630	16,489	4,561	17,349
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 39,846	$ 66,728	$ (10,008)	$ (7,123)
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 417,526	$ 104,382	$ 260,956	$ 242,451
Current discount rate (7.50%)	$ 337,719	$ 84,430	$ 211,076	$ 196,109
1% increase (8.50%)	$ 270,576	$ 67,644	$ 169,111	$ 157,119
Covered Payroll	$ 135,039	$ 38,015	$ 72,210	$ 39,940

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	North Andover Housing Authority	Rockport Housing Authority	Rowley Housing Authority	Salisbury Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 1,639,603	$ 450,652	$ 150,218	$ 337,990
Ending net pension liability	$ 1,785,851	$ 464,366	$ 168,860	$ 337,719
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	91,853	23,884	8,685	17,370
Changes of assumptions	94,678	24,619	8,952	17,904
Changes in proportion and differences between employer contributions and proportionate share of contributions	13,269	58,365	12,968	7,819
Total Deferred Outflows of Resources	$ 199,800	$ 106,868	$ 30,605	$ 43,093
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 15,489	$ 4,028	$ 1,465	$ 2,929
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	97,128	222,156	659	57,715
Total Deferred Inflows of Resources	$ 112,617	$ 226,184	$ 2,124	$ 60,644
Pension Expense				
Proportionate share of plan pension expense	$ 205,636	$ 53,470	$ 19,444	$ 38,890
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(36,143)	(39,530)	2,784	(13,948)
Total Employer Pension Expense	$ 169,493	$ 13,940	$ 22,228	$ 24,942
Contributions				
Statutory required contribution	$ 153,545	$ 37,444	$ 29,327	$ 27,232
Contribution in relation to statutory required contribution	(153,545)	(37,444)	(29,327)	(27,232)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	27.34%	24.03%	50.70%	26.05%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ 25,712	$ (23,446)	$ 8,633	$ (2,251)
June 30, 2021	15,986	(38,922)	6,949	(11,342)
June 30, 2022	14,359	(59,798)	6,055	(4,033)
June 30, 2023	31,126	2,850	6,844	75
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 87,183	$ (119,316)	$ 28,481	$ (17,551)
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 2,207,870	$ 574,101	$ 208,763	$ 417,526
Current discount rate (7.50%)	$ 1,785,851	$ 464,366	$ 168,860	$ 337,719
1% increase (8.50%)	$ 1,430,798	$ 372,043	$ 135,288	$ 270,576
Covered Payroll	$ 561,662	$ 155,803	$ 57,841	$ 104,551

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2018

	Topsfield Housing Authority	Wenham Housing Authority	West Newbury Housing Authority	Totals
Net Pension Liability				
Beginning net pension liability	$ 187,771	$ 343,770	$ -	$ 376,355,338
Ending net pension liability	$ 211,076	$ 337,719	$ -	$ 422,465,618
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	10,856	17,370	-	21,728,988
Changes of assumptions	11,190	17,904	-	22,397,343
Changes in proportion and differences between employer contributions and proportionate share of contributions	43,706	40,383	-	12,009,855
Total Deferred Outflows of Resources	$ 65,752	$ 75,657	$ -	$ 56,136,186
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 1,831	$ 2,929	$ -	$ 3,664,197
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	64,914	39,728	7,643	12,009,855
Total Deferred Inflows of Resources	$ 66,745	$ 42,657	$ 7,643	$ 15,674,052
Pension Expense				
Proportionate share of plan pension expense	$ 24,307	$ 38,889	$ -	$ 48,645,637
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(2,060)	1,265	(6,370)	-
Total Employer Pension Expense	$ 22,247	$ 40,154	$ (6,370)	$ 48,645,637
Contributions				
Statutory required contribution	$ 17,020	$ 32,703	$ -	$ 33,969,088
Contribution in relation to statutory required contribution	(17,020)	(32,703)	-	(33,993,920)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ (24,832)
Contributions as a percentage of covered payroll	26.58%	28.58%	N/A	24.98%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2020	$ 5,251	$ 12,962	$ (6,370)	$ 14,632,609
June 30, 2021	3,014	13,021	(1,273)	9,520,985
June 30, 2022	(13,886)	6,980	-	7,163,550
June 30, 2023	4,628	37	-	9,144,990
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (993)	$ 33,000	$ (7,643)	$ 40,462,134
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 260,956	$ 417,526	$ -	$ 522,299,488
Current discount rate (7.50%)	$ 211,076	$ 337,719	$ -	$ 422,465,618
1% increase (8.50%)	$ 169,111	$ 270,576	$ -	$ 338,473,321
Covered Payroll	$ 64,025	$ 114,410	$ -	$ 136,111,184

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(concluded)

NOTE I – Schedule of Employer Allocations

Governmental Accounting Standards Board (GASB) Statement #68 requires employers participating in a cost-sharing pension plan to recognize pension liabilities as employees provide services to the government and earn their pension benefits. Employers participating in cost-sharing plans are required to recognize their proportionate share of the plan's collective pension amounts for all benefits provided through the plan including the net pension liability, deferred outflows of resources, deferred inflows of resources, contributions and pension expense.

GASB Statement #68 requires the allocation of the collective pension amounts be consistent with the manner in which contributions to the plan are determined. As permissible under GASB Statement #68, The Schedule of Employer Allocations is used to demonstrate the allocation of Essex Regional Retirement System's collective pension amounts.

Massachusetts General Law (MGL) Chapter 32 Section 22 Paragraph 7c dictates that Massachusetts cost sharing defined benefit pension plans allocate the annual required pension fund appropriation to employer units based on their proportionate share of the aggregate of the annual rates of regular compensation of all members in service of the system who are employees of any government unit at the close of business on the September 30th immediately preceding the fiscal year. Accordingly, the proportionate aggregate rates of regular compensation as of the close of business on September 30, 2017 were applied to allocate the System's fiscal year 2019 pension fund appropriation by member unit.

When a member unit accepts an Early Retirement Incentive Program (E.R.I. or ERIP), PERAC completes an analysis of the costs and liabilities attributable to the additional benefits payable in accordance with the ERIP. The accrued liability for the members who accept the ERIP as retirees including the ERIP less the accrued liability for the members as active employees excluding the ERIP represents the increase in accrued liability due to the ERIP. The net increase is amortized for each member unit accepting the ERIP, and is separately identified in the system's funding schedule. The 2002 ERIP amortization is straight line ending in fiscal 2019, except Nahant Housing which is increasing at 4.5% per year ending in 2028 and Essex Regional Retirement Board which was straight line and ended in fiscal 2012. The 2003 ERI amortization is straight line ending in fiscal 2020, except for Groveland which is increasing at 4.5% per year ending in 2028 and Essex Regional Retirement Board which was straight line and ended in fiscal 2012.

The allocation percentage of the total net pension liability is a blended rate of the following items. (1) The proportionate share of active employer's covered payroll is applied to the fiscal year 2019 pension fund appropriation calculated by the actuary. (2) Current Direct E.R.I. appropriation is a direct current charge calculated by PERAC for only the employers that accepted the ERIP. This direct charge backed out of the total pension fund appropriation to calculate the percentage to be allocated (3) Remaining Direct E.R.I. liability is the future E.R.I. liability associated directly to those employers that accepted the ERIP. This direct liability is added back to those employers once the non-ERIP liability has been allocated.

NOTE II – Schedule of Pension Amounts by Employer

The Schedule of Pension Amounts by Employer presents the net pension liability, the various categories of deferred outflows of resources and deferred inflows of resources, contributions and pension expense for all participating employers including differences between expected and actual economic experience; differences between projected and actual investment earnings, net; and changes of assumptions.

NOTE III – CHANGES IN ACTUARIAL ASSUMPTIONS AND PLAN PROVISIONS

Actuarial Assumptions:

None.

Plan Provisions:

None.

ESSEX REGIONAL RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2017

ESSEX REGIONAL RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2017

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Financial Section

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Independent Auditor's Report

To the Honorable Essex Retirement Board
Essex Regional Retirement System
Danvers, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of the Essex Regional Retirement System (ERRS) as of and for the year ended December 31, 2017, and the related notes to the financial statements, which collectively comprise the Essex Regional Retirement System's 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 an opinion 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 opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Essex Regional Retirement System as of December 31, 2017, and the results of its operations and changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis; the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Returns 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 Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated September 24, 2018, on our consideration of the Essex Regional Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is 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 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 Essex Regional Retirement System's internal control over financial reporting and compliance.

Restriction on Use

This report is intended solely for the information and use of Essex Regional Retirement System, the Public Employee Retirement Administration Commission and all member units and is not intended to be and should not be used by anyone other than these specified parties.

Powers & Sullivan LLC

September 24, 2018

Management's Discussion and Analysis

As management of the Essex Regional Retirement System, we offer readers of these financial statements this narrative overview and analysis of the financial activities for the year ended December 31, 2017. The System complies with financial reporting requirements issued by the Governmental Accounting Standards Board (GASB).

The GASB is the authoritative standard setting body that provides guidance on how to prepare financial statements in conformity with generally accepted accounting principles (GAAP). Users of these financial statements rely on the GASB to establish consistent reporting standards for all governments in the United States. This consistent application is the only way users can assess the financial condition of a public retirement system compared to others.

Financial Highlights

- The System's assets exceeded its liabilities at the close of the most recent year by $467.5 million (net position).
- The System's net position increased by $64.5 million for the year ended December 31, 2017.
- Total investment income was $68.6 million; investment expenses were $2.3 million; and net investment income was $66.3 million.
- Total contributions were $47.9 million including $31.2 from employers, $13.1 from members, and $3.6 million from other contributions.
- Retirement benefits, refunds and transfers amounted to $48.6 million.
- Administrative expenses were $982,000.
- The Total Pension Liability is $843.8 million as of December 31, 2017 while the Net Pension Liability is $376.4 million.
- The Plan fiduciary net position as a percentage of the total pension liability is 55.40%.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the System fiduciary financial statements. These fiduciary financial statements comprise of four components: 1) management's discussion and analysis, 2) fiduciary financial statements, 3) notes to the financial statements and 4) required supplementary information.

Fiduciary Financial Statements

The *statement of net position* presents information on all assets and deferred outflows less deferred inflows and liabilities with the difference reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position is improving or deteriorating.

The *statement of changes in fiduciary net position* presents information showing how the system's net position changed during the most recent year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, additions and deductions are reported in this statement for some items that will only result in cash flows in future periods.

Notes to the financial statements

The notes provide additional information that is essential to a full understanding of the data provided in the fiduciary financial statements.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Returns 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.

Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of the System's financial position. The System's net position exceeded liabilities by $467.5 million at the close of 2017.

The assets accumulated are held to provide pension benefits for qualified retirees along with active and inactive employees of the member units. At year-end, the system's net position include investments of $460.3 million, cash of $2.9 million, accounts receivable of $4.2 million, and capital assets of $175,000.

In 2017, the System's contributions totaled $47.9 million while deductions totaled $49.6 million, which resulted in a current deficiency of ($1.7) million. A ($1.8) million deficiency occurred in 2016. Therefore, for these two years, the system relied on investment income to sustain operations.

The main difference of the increase in net position between years was the change in net investment income between years. Net investment income was $66.3 million and $26.4 million in 2017 and 2016 respectively. The annual money weighted rate of return was 17.11% and 7.8% in 2017 and 2016 respectively. Fluctuations in the system's annual investment returns are expected.

In 2016, the System recognized a contribution from Essex North Shore Agricultural and Technical School District (Essex Tech) as the successor agency to both the Essex Agricultural and Technical High School and the North Shore Vocational Regional School. Legislation requires Essex Tech to reimburse ERRS for the actuarially determined liability associated with the retired members from Essex Agricultural and Technical High School who remain with ERRS. Accordingly in 2015, PERAC approved a funding schedule for Essex Tech to pay ERRS in equal annual payments of $421,947 through 2033. The $3.6 million present value of these payments has been recorded as an intergovernmental receivable at year-end.

The following tables present summarized financial information for the past two years.

	2017	2016
Statement of Fiduciary Net Position		
Assets:		
Cash……………………………………………………	$ 2,894,889	$ 1,881,650
Investments……………………………………………	460,271,251	397,333,654
Receivables……………………………………………	4,223,141	4,726,786
Capital assets, net of accumulated depreciation……	175,497	204,741
Total assets…………………………………………	467,564,778	404,146,831
Liabilities:		
Accounts payable……………………………………	90,489	1,216,758
Abandoned property…………………………………	-	190
Total liabilities………………………………………	90,489	1,216,948
Net Position Restricted for Pension Benefits……….	$ 467,474,289	$ 402,929,883

	2017	2016
Statement of Changes in Fiduciary Net Position		
Additions:		
Contributions:		
Member contributions……………………………	$ 13,077,844	$ 16,673,138
Employer contributions…………………………	31,239,783	29,431,067
Other contributions………………………………	3,575,613	388,786
Total contributions……………………………	47,893,240	46,492,991
Net investment income (loss):		
Total investment income (loss)…………………	68,602,654	28,610,761
Less, investment expenses………………………	(2,344,138)	(2,203,765)
Net investment income (loss)…………………	66,258,516	26,406,996
Total additions………………………………	114,151,756	72,899,987
Deductions:		
Administration…………………………………………	981,979	975,517
Retirement benefits, refunds and transfers…………	48,625,371	47,333,349
Total deductions………………………………	49,607,350	48,308,866
Net increase (decrease) in fiduciary net position………	64,544,406	24,591,121
Fiduciary net position at beginning of year……….	402,929,883	378,338,762
Fiduciary net position at end of year…………………	$ 467,474,289	$ 402,929,883

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all 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 addressed to the System's Board, 491 Maple Street #202, Danvers, MA 01923.

STATEMENT OF FIDUCIARY NET POSITION

DECEMBER 31, 2017

Assets		
Cash and cash equivalents	$	2,894,889
Investments:		
Investments in Pension Reserve Investment Trust		450,210,889
Individually owned short term investments		48
Pooled alternative investments		9,833,162
Pooled real estate funds		224,655
Fixed income investments		2,497
Total investments		460,271,251
Receivables, net of allowance for uncollectibles:		
Member contributions		611,413
Essex Agricultural and Technical High School		3,611,647
Interest and dividends		81
Capital assets, net of accumulated depreciation		175,497
Total Assets		467,564,778
Liabilities		
Accounts payable		90,489
Net Position Restricted for Pensions	$	467,474,289

See notes to financial statements.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

YEAR ENDED DECEMBER 31, 2017

Additions:		
Contributions:		
Employer pension appropriation	$	31,239,783
Member contributions		13,077,844
Transfers from other systems		1,235,403
3(8)(c) contributions from other systems		1,616,935
Workers' compensation settlements		19,500
Federal grant reimbursements		48,680
State COLA reimbursements		329,665
Members' makeup payments and redeposits		258,951
Interest not refunded		23,548
Other revenue		42,931
Total contributions		47,893,240
Net investment income:		
Investment income (loss)		68,602,654
Less: investment expense		(2,344,138)
Net investment income (loss)		66,258,516
Total additions		114,151,756
Deductions:		
Administration		981,979
Retirement benefits and refunds		44,959,784
Transfers to other systems		1,743,990
3(8)(c) transfer to other systems		1,906,043
Depreciation		15,554
Total deductions		49,607,350
Net increase (decrease) in fiduciary net position		64,544,406
Fiduciary net position at beginning of year		402,929,883
Fiduciary net position at end of year	$	467,474,289

See notes to financial statements.

NOTE 1 – PLAN DESCRIPTION

Essex Regional Retirement System is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of governmental member units deemed eligible by the Essex Regional Retirement Board (the Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the Plan is mandatory immediately upon the commencement of employment for all non-teaching permanent, full time employees. The Plan is administered by the Essex Regional Retirement System (the System).

Originally instituted in 1937, as part of Essex County government, the Board served as the regional retirement system for Essex County upon the abolition of county government in 1996 and the current system structure was created by special legislation in July, 2010 (Chapter 34B, Section 19A of the Massachusetts General Laws). The System is governed by a five member Board who establish the policies under which the System operates. Board members also approve all of the System's financial transactions, including the approval of retirement benefits to members. Board members are appointed or elected as specified by MGL Ch. 34B, Section 19A for terms ranging from 3 to 5 years.

The day-to-day operations of the System are managed by the Executive Director. The legislative body for the System is an Advisory Council consisting of full-time treasurers or other qualified officials of the member units. The Advisory Council meets twice annually and is responsible for supervising and certifying the procedures involved in the election of members to the retirement board.

As of December 31, 2017, the System had 1,768 retirees and beneficiaries, 2,738 active participants and 1,030 inactive participants with a vested right to retirement benefits or to receive a refund of their contributions.

The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The Public Employee Retirement Administration Commission (PERAC) is the state agency responsible for oversight of the Commonwealth's public retirement systems.

Massachusetts Contributory Retirement System benefits are, with certain exceptions, uniform from system to system. The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For persons who became members on or after April 2, 2012, average salary is the average annual rate of regular compensation received during the five consecutive years that produce the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are three classes of membership in the retirement system: group 1, group 2, and group 4. Group 1 consists of general employees, which includes clerical and administrative positions. Group 2 consists of positions that have been specified as hazardous. Lastly, group 4 consists of police officers, firefighters, and other hazardous positions.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of 20 years of service or upon reaching the age of 55 with 10 years of service if hired after 1978 and if classified in groups 1 or 2. A person who became a member on or after April 2, 2012 is eligible for a superannuation retirement allowance upon reaching the age of 60 with 10 years of service if in group 1, 50 years of age with 10 years of service if in group 2, and 55 years of age if hired prior to 1978 or if classified in group 4. Normal retirement for most employees occurs at age 65 (except for certain hazardous duty and public safety positions, whose normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension.

Active members contribute between 5% and 11% of their gross regular compensation. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Public Employee Retirement Administration Commission's (PERAC) actuary. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Any cost-of-living adjustments granted between 1981 and 1997 and any increase in other benefits imposed by the Commonwealth of Massachusetts' state law during those years are borne by the Commonwealth and are deposited into the Pension Fund. Cost-of-living adjustments granted after 1997 must be approved by the System and all costs are borne by the System.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current-year pension assessment. In past years, retirement systems were paying only the actual retirement benefits that were due each year. Systems had no statutory authorization to put aside money for the future benefits of employees who are currently employed. Large unfunded liabilities resulted from operating under this pay-as-you-go basis. In 1977, legislation authorized local governments to appropriate funds to meet future pension obligations. In 1983, additional legislation was passed requiring the transfer of investment earnings (in excess of the amount credited to member accounts) into the Pension Reserve Fund.

Administrative expenses, which were previously appropriated from the governmental entities whose employees are members of the system, are now paid from investment income.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent on several factors, including whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veterans' status and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions.

Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements of the Essex Regional Retirement System (ERRS) have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is the recognized standard-setting body for establishing governmental accounting and financial reporting principles.

ERRS is a special-purpose government engaged only in fiduciary activities. Accordingly, the financial statements are reported using the flow of economic resources measurement focus and use the accrual basis of accounting. Under this method, additions are recorded when earned and deductions are recorded when the liabilities are incurred.

Cash and Investments

Cash and cash equivalents are considered to be cash on hand, demand deposits and short-term investments with an original maturity of three months or less from the date of acquisition. Investments are carried at fair value. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market. The fair value of private equities are based on management's valuation of estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values. Real estate assets are reported at fair value utilizing an income approach to valuation along with independent appraisals and estimates by management.

Fair Value Measurements

The System reports required types of financial instruments in accordance with the fair value standards. These standards require an entity to maximize the use of observable inputs (such as quoted prices in active markets) and minimize the use of unobservable inputs (such as appraisals or valuation techniques) to determine fair value. Fair value standards also require the government to classify these financial instruments into a three-level hierarchy, based on the priority of inputs to the valuation technique or in accordance with net asset value practical expedient rules, which allow for either Level 2 or Level 3 depending on lock up and notice periods associated with the underlying funds.

Instruments measured and reported at fair value are classified and disclosed in one of the following categories:

Level 1 – Quoted prices are available in active markets for identical instruments as of the reporting date. Instruments, which are generally included in this category, include actively traded equity and debt securities, U.S. government obligations, and mutual funds with quoted market prices in active markets.

Level 2 – Pricing inputs are other than quoted in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or other valuation methodologies. Certain fixed income securities, primarily corporate bonds, are classified as Level 2 because fair values are estimated using pricing models, matrix pricing, or discounted cash flows.

Level 3 – Pricing inputs are unobservable for the instrument and include situations where there is little, if any, market activity for the instrument. The inputs into the determination of fair value require significant management judgment or estimation.

In some instances the inputs used to measure fair value may fall into different levels of the fair value hierarchy and is based on the lowest level of input that is significant to the fair value measurement.

Market price is affected by a number of factors, including the type of instrument and the characteristics specific to the instrument. Instruments with readily available active quoted prices generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value. It is reasonably possible that change in values of these instruments will occur in the near term and that such changes could materially affect amounts reported in these financial statements. For more information on the fair value of the System's financial instruments see Note 4.

Accounts Receivable

Accounts receivable consist of member deductions, future appropriations from Essex Technical High School for the unfunded actuarial liability for retirees from Essex Agricultural and Technical School, pension fund appropriations, and federal grant reimbursements. These receivables are considered 100% collectible and

therefore do not report an allowance for uncollectibles.

Deferred Outflows/Inflows of Resources

In addition to assets, the statement of fiduciary net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *deferred outflows of resources*, represents a consumption of fiduciary net position that applies to a future period(s) and so will not be recognized as an outflow of resources (deduction) until then. The ERRS did not have any items that qualify for reporting in this category.

In addition to liabilities, the statement of fiduciary net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *deferred inflows of resources*, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (addition) until that time. The ERRS did not have any items that qualify for reporting in this category.

NOTE 3 – PLAN ADMINISTRATION

The System is administered by a five-person Board of Retirement. The first member shall be a chief executive or chief administrative officer of a member town, unit or district belonging to the Essex Regional Retirement System for a term of 3 years. This member shall be chosen by weighted vote of the chief executive or chief administrative officers of member towns, units or districts belonging to the Essex Regional Retirement System. The second member shall be a member of the regional retirement board advisory council, and shall be elected by a majority of those present and voting at a public meeting of the council and shall serve for a term of 3 years. The third and fourth members shall be elected by the members in or retired from service of the Essex County Retirement System from among persons retired under the system and shall serve for a term of 3 years. The fifth member, who shall not be an employee, retiree or official of the retirement system, or of any of its constituent governmental units, shall be chosen by the other 4 members and shall serve for a term of 5 years.

First Member	Alan J. Benson	Term Expires:	12/1/2020
Second Member	Kevin A. Merz	Term Expires:	12/1/2018
Third Member	Susan J. Yaskell	Term Expires:	12/1/2019
Fourth Member	H. Joseph Maney	Term Expires:	12/1/2019
Fifth Member	Vincent R. Malgeri	Term Expires:	12/12/2020

Board members are required to meet at least once a month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the System. The Board must annually file a financial statement of condition for the System with PERAC.

The ERRS Advisory Council consists of the full time treasurers, elected or appointed, for each town, unit or district within the System. The members of the Advisory Council elect the second member of the Board of Retirement as well as a Chair from among its members. The ERRS Advisory Council is required by statute to meet twice per year, typically in the spring and fall. All ERRS Advisory Council meetings are open, public meetings and are subject to the Commonwealth's Open Meeting Law.

The investment of the System's funds is the responsibility of the Board. Disability retirement allowances must be approved by the Retirement Board and are then submitted to the PERAC Actuary for verification prior to payment.

Superannuation retirement allowances are not required to obtain PERAC's verification. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by two persons designated by the Board.

ERRS board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. The MACRS program for ERRS provides $50,000,000 fiduciary protection for Trustees and employees, as well as a $1,000,000 fidelity policy for crime coverage.

NOTE 4 – CASH AND INVESTMENTS

Custodial Credit Risk - Deposits

At December 31, 2017, the carrying amount of the System's deposits totaled $2,894,889 and the bank balance totaled $3,215,746, which was covered by Federal Depository Insurance.

Investments

The System's investments are as follows:

		Maturity
Investment Type	**Fair Value**	**Over 10 Years**
Debt Securities:		
Fixed Income……………………..	$ 2,497	$ 2,497
Other Investments:		
PRIT Pooled Funds………………	450,210,889	
Money Market Mutual Funds……	48	
Pooled Alternative Investments….	9,833,162	
Pooled Real Estate Funds………	224,655	
Total Investments……………….	$ 460,271,251	

Approximately 98% of the Retirement System's investments are in Pension Reserve Investment Trust (PRIT) Pooled Funds. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board. The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The Administration does not have the ability to control any of the investment decisions relative to its funds in PRIT.

Approximately 2% of the System's funds are invested in pooled alternative investments and pooled real estate funds. The market values of assets in those funds are based on the quoted values obtained from each pool.

The Administration's annual money-weighted rate of return on pension plan investments was 17.11%. The money–weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested, measured monthly.

Fair Value of Investments

The retiree pension defined benefit plan holds significant amounts of investments that are measured at fair value on a recurring basis. Because investing is a key part of the plan's activities, the plan shows greater disaggregation in its disclosures. The plan chooses a tabular format for disclosing the levels within the fair value hierarchy.

The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles.

The System has the following recurring fair value measurements as of December 31, 2017:

		Fair Value Measurements Using		
Investment Type	12/31/2017	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				
Fixed Income	$ 2,497	$ 2,497	$ -	$ -
Other Investments				
Money Market Mutual Funds	48	48	-	-
Pooled Alternative Investments	9,833,162	-	-	9,833,162
Pooled Real Estate Funds	224,655	-	-	224,655
Total Investments by fair value level	10,060,362	$ 2,545	$ -	$ 10,057,817
Investments measured at the net asset value (NAV)				
PRIT Investments	450,210,889			
Total Investments	$ 460,271,251			

Fixed Income, and Money Market Mutual Funds in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Pooled Alternative Investments and Pooled Real Estate Funds classified in level 3 are valued using either a discounted cash flow or market comparable companies technique.

PRIT Investments are valued using the net asset value (NAV) method. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The System does not have the ability to control any of the investment decisions relative to its funds in PRIT.

NOTE 5 – RECEIVABLES

At December 31, 2017, receivables for the System are as follows:

	Gross Amount	Allowance for Uncollectibles	Net Amount
Receivables:			
Member contributions……………………………	$ 611,413	$ -	$ 611,413
Essex Agricultural and Technical High School..	3,611,647	-	3,611,647
Total………………………………………………	$ 4,223,060	$ -	$ 4,223,060

As more fully described in Note 9, the intergovernmental receivable consists of the present value of a stream of future payments to be received from Essex Technical High School (Essex Tech), as the successor agency of Essex Agricultural and Technical School from fiscal year 2017 through fiscal year 2033 for the unfunded actuarial liability for its retirees in the Essex Regional Retirement System.

NOTE 6 – CAPITAL ASSETS

Capital assets are depreciated on a straight-line basis. The estimated useful lives of capital assets are 33 years for buildings and 5 to 20 years for equipment.

The majority of capital assets owned by the System consist of two condominiums in Danvers, Massachusetts that were purchased for the administrative offices of the System. Both units were purchased in fiscal year 2000 for a total of $375,250. Total capital asset activity for the year ended December 31, 2017, was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets being depreciated:				
Buildings………………………………………………	$ 375,250	$ -	$ -	$ 375,250
Equipment………………………………………………	29,270	-	(13,690)	15,580
Total capital assets being depreciated…………	404,520	-	(13,690)	390,830
Less accumulated depreciation for:				
Buildings………………………………………………	(185,757)	(11,258)	-	(197,015)
Equipment………………………………………………	(14,022)	(4,296)	-	(18,318)
Total accumulated depreciation…………………	(199,779)	(15,554)	-	(215,333)
Total governmental activities capital assets, net………	$ 204,741	$ (15,554)	$ (13,690)	$ 175,497

NOTE 7 – MEMBERSHIP

The following table represents the System's membership at December 31, 2017:

Active members……………………………………………………	2,738
Inactive members entitled to a return of contributions…………….	1,030
Retired, Beneficiary, and Survivor……………………………………	1,768
Total………………………………………………………………	5,536

NOTE 8 – ACTUARIAL VALUATION

The total pension liability was determined by an actuarial valuation as of January 1, 2018, using the following actuarial assumptions, applied to all periods included in the measurement that was updated back to December 31, 2017:

Valuation date………………………………	January 1, 2018
Salary increases…………………………….	Based on years of service, ranging from 7.50% at 0 years of service decreasing to 3.75% after 5 years of service.
Net investment return/Discount rate……….	7.50%
Inflation rate…………………………………	2.75%
Cost of living adjustments…………………	3% of first $14,000
Mortality Rates:	
Pre-Retirement………………….	RP-2000 Employee Mortality Table projected generationally with Scale BB.
Healthy Retiree………………….	RP-2000 Healthy Annuitant Mortality Table projected generationally with Scale BB.
Disabled Retiree…………………	RP-2000 Healthy Annuitant Mortality Table, set forward two years projected generationally with Scale BB.

Components of the net pension liability as of December 31, 2017 were as follows:

Total pension liability…………………………………………	$	843,829,627
The pension plan's fiduciary net position…………………		467,474,289
The net pension liability………………………………………	$	376,355,338
The pension plan's fiduciary net position as a percentage of the total pension liability………………………………		55.40%

Investment policy: The pension plan's policy in regard to the allocation of invested assets is established by PRIT and the Board. Plan assets are managed on a total return basis with a long-term objective of achieving a fully funded status for the benefits provided through the pension plan.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which expected future real rates of return (expected returns, net of 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, adding expected inflation and subtracting expected investment expenses and risk margin. The target allocation and projected arithmetic real rates of return for each major asset class, after deducting inflation, but before investment expense, used in the derivation of the long-term investment rate of return assumption as of December 31, 2017 are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return	Long-Term Expected Asset Allocation
Domestic equity………………………………………	6.15%	17.50%
International developed markets equity…………	7.11%	15.50%
International emerging markets equity…………	9.41%	6.00%
Core fixed income…………………………………	1.68%	12.00%
High-yield fixed income………………………….	4.13%	10.00%
Real estate…………………………………………	4.90%	10.00%
Commodities…………………………………………	4.71%	4.00%
Hedge fund, GTAA, Risk parity…………………	3.94%	13.00%
Private Equity………………………………………	10.28%	12.00%
Total Fund Expected Return/Total……………		100.00%

Discount Rate. The discount rates used to measure the Total Pension Liability were 7.50% and 7.75% as of December 31, 2017 and December 31, 2016, respectively. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the actuarially determined contribution rates. For this purpose, only employer contributions that are intended to fund benefits for the current plan members and their beneficiaries are included. Projected employer contributions that are intended to fund the service cost for future plan members and their beneficiaries, as well as projected contributions from future plan members, are not included. Based on those assumptions, the Plan Fiduciary Net Position was projected to be available to make all projected future benefit payments for current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability as of both December 31, 2017 and December 31, 2016.

Sensitivity of the net position liability to changes in the discount rate. The following presents the net pension liability, calculated using the discount rate of 7.50%, as well as what the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.50%) or 1-percentage-point higher (8.50%) than the current rate.

	1.0% Decrease (6.50%)	Current Discount Rate (7.50%)	1.0% Increase (8.50%)
Essex Regional Retirement System's net pension liability as of December 31, 2017….	$ 473,500,765	$ 376,355,338	$ 294,642,498

Contributions: Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE 9 – ESSEX AGRICULTURAL AND TECHNICAL HIGH SCHOOL

Chapter 463 of the Acts of 2004 created the Essex North Shore Agricultural and Technical School District (Essex Tech). This legislation established Essex Tech as the successor agency to both the Essex Agricultural and Technical High School and the North Shore Vocational Regional School. Prior to July 1, 2014, the non-teacher employees of the Essex Agricultural and Technical High School were members of ERRS. The legislation required that all active and inactive members be transferred to the Salem Contributory Retirement System. Accordingly, as of June 30, 2015, all active and inactive members of ERRS have been transferred to the Salem Contributory Retirement System. Essex Tech, as the successor agency, is required to reimburse ERRS for the actuarially determined liability associated with the retired members from Essex Agricultural and Technical High School who remain with ERRS. Accordingly, PERAC approved a funding schedule that requires Essex Tech to pay ERRS equal annual assessments of $421,947 through 2033. The $3,611,647 present value of these payments has been recorded as an intergovernmental receivable by ERRS as of December 31, 2017.

NOTE 10 – COMMITMENTS AND CONTINGENCIES

Various legal actions and claims are pending against the System. Litigation is subject to many uncertainties, and the outcome of individual litigated matters is not always predictable. Although the amount of liability, if any, at December 31, 2017 cannot be ascertained, management believes any resulting liability should not materially affect the financial position at December 31, 2017.

NOTE 11 – IMPLEMENTATION OF NEW GASB PRONOUNCEMENTS

During 2017, the following GASB pronouncements were implemented:

- GASB Statement #82, *Pension Issues – an amendment of GASB Statements #67, #68, and #73*. The financial statements and related notes were updated to be in compliance with this pronouncement.

The following GASB pronouncements will be implemented in the future:

- The GASB issued Statement #83, *Certain Asset Retirement Obligations*, which is required to be implemented in 2019.
- The GASB issued Statement #84, *Fiduciary Activities*, which is required to be implemented in 2020.
- The GASB issued Statement #85, *Omnibus 2017*, which is required to be implemented in 2018.
- The GASB issued Statement #86, *Certain Debt Extinguishment Issues*, which is required to be implemented in 2018.
- The GASB issued Statement #87, *Leases*, which is required to be implemented in 2021.

- The GASB issued Statement #88, *Certain Disclosures Related to Debt, Including Direct Borrowings and Direct Placements*, which is required to be implemented in 2019.

Management is currently assessing the impact the implementation of these pronouncements will have on the financial statements.

NOTE 12 – SUBSEQUENT EVENTS

Management has evaluated subsequent events through September 24, 2018, which is the date the financial statements were available to be issued.

Required Supplementary Information

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

	December 31, 2014	December 31, 2015	December 31, 2016	December 31, 2017
Total pension liability:				
Service cost	$ 10,581,511	$ 14,484,797	$ 15,597,356	$ 16,877,715
Interest	54,243,222	56,453,975	57,096,460	60,670,085
Changes in benefit terms	-	-	4,350,523	-
Differences between expected and actual experience	-	-	(8,590,424)	(49,644)
Changes in assumptions	-	-	20,216,699	23,073,540
Benefit payments	(38,353,266)	(39,994,008)	(42,130,566)	(44,959,784)
Net change in total pension liability	26,471,467	30,944,764	46,540,048	55,611,912
Total pension liability - beginning	684,261,436	710,732,903	741,677,667	788,217,715
Total pension liability - ending (a)	$ 710,732,903	$ 741,677,667	$ 788,217,715	$ 843,829,627
Plan fiduciary net position:				
Employer pension appropriation	$ 26,066,222	$ 27,893,676	$ 29,420,144	$ 31,239,783
Member contributions	12,168,827	12,491,708	12,864,434	13,077,844
Other contributions	3,940,038	7,805,125	4,208,413	3,575,613
Net investment income (loss)	29,322,861	4,103,832	26,406,996	66,258,516
Administrative expenses	(922,351)	(934,672)	(961,143)	(981,979)
Retirement benefits and refunds	(38,353,266)	(39,994,008)	(42,130,565)	(44,959,784)
Other retirement deductions	(5,728,996)	(4,483,236)	(5,202,784)	(3,650,033)
Depreciation	(14,374)	(14,374)	(14,374)	(15,554)
Net increase (decrease) in fiduciary net position	26,478,961	6,868,051	24,591,121	64,544,406
Fiduciary net position - beginning of year	344,991,750	371,470,711	378,338,762	402,929,883
Fiduciary net position - end of year (b)	$ 371,470,711	$ 378,338,762	$ 402,929,883	$ 467,474,289
Net pension liability - ending (a)-(b)	$ 339,262,192	$ 363,338,905	$ 385,287,832	$ 376,355,338
Plan fiduciary net position as a percentage of the total pension liability	52.27%	51.01%	51.12%	55.40%
Covered payroll	$ 123,190,220	$ 128,258,043	$ 133,089,526	$ 130,743,710
Net pension liability as a percentage of covered payroll	275.40%	283.29%	289.50%	287.86%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF CONTRIBUTIONS

	December 31, 2014	December 31, 2015	December 31, 2016	December 31, 2017
Actuarially determined contribution……………	$ 26,066,222	$ 32,050,432	$ 29,420,338	$ 31,614,412
Contributions in relation to the actuarially determined contribution……………………	(26,066,222)	(32,123,557)	(29,463,314)	(31,663,092)
Contribution deficiency (excess)………….	$ -	$ (73,125)	$ (42,976)	$ (48,680)
Covered payroll………………………………….	$ 123,190,220	$ 128,258,043	$ 133,089,526	$ 130,743,710
Contributions as a percentage of covered payroll………………………………..	21.16%	25.05%	22.14%	24.22%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF INVESTMENT RETURNS

Year	Annual money-weighted rate of return, net of investment expense
December 31, 2017……………………….	17.11%
December 31, 2016……………………….	7.80%
December 31, 2015……………………….	1.04%
December 31, 2014……………………….	8.48%

Note: this schedule is intended to present information for 10 years. Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

NOTE A – CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

The Schedule of Changes in the Net Pension Liability and Related Ratios includes the detailed changes in the systems total pension liability, changes in the systems net position, and the ending net pension liability. It also demonstrates the plan's net position as a percentage of the total pension liability and the net pension liability as a percentage of covered payroll.

NOTE B – CONTRIBUTIONS

Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The total appropriations are payable on July 1 and January 1. Employers may choose to pay the entire appropriation in July at a discounted rate. Accordingly, actual employer contributions may be less than the "total appropriation". The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE C – MONEY WEIGHTED RATE OF RETURN

The money weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. A money weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. Inputs to the money weighted rate of return calculation are determined monthly.

NOTE D – CHANGES IN ACTUARIAL ASSUMPTIONS AND PLAN PROVISIONS

Effective January 1, 2018 the following changes were made.

Actuarial Assumptions:

- The net investment return assumption and discount rate were lowered from 7.75% to 7.50%.
- The inflation rate was lowered from 4.00% to 2.75%.
- The assumed interest on employee contributions was increased from 2.0% to 3.75%.
- The administrative expense assumption was lowered from $1,127,500 to $1,000,000.
- The retirement rates for employees in Groups 1 and 2 hired after April 1, 2012 and in Group 4 were revised to match the rates for employees hired before April 1, 2012 and there were minor changes to the rates prior to age 54 for Group 4 employees.
- The percentage of accidental disability retirees who are expected to die from the same cause as the disability was lowered from 40% to 20% for groups 1 and 2 employees and increased from 40% to 60% for Group 4 employees.
- The allowance for net 3(8)(c) payments was changed from an estimated liability to a term cost added to the service cost.

Plan Provisions:

None.

Audit of Specific Elements, Accounts and Items of Financial Statements

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Independent Auditor's Report

To the Honorable Essex Retirement Board
Essex Regional Retirement System
Danvers, Massachusetts

We have audited the accompanying schedule of employer allocations of the Essex Regional Retirement System (ERRS) as of and for the year ended December 31, 2017, and the related notes. We have also audited the total for all entities of the rows titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions and total pension expense included in the accompanying schedule of pension amounts by employer of the ERRS Pension Plan as of and for the year ended December 31, 2017, and the related notes.

Management's Responsibility for the Schedules

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

Auditor's Responsibility

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

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

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

Opinions

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

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the Essex Regional Retirement System as of and for the year ended December 31, 2017, and our report thereon, dated September 24, 2018, expressed an unmodified opinion on those financial statements.

Restriction on Use

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

Powers & Sullivan LLC

September 24, 2018

SCHEDULE OF EMPLOYER ALLOCATIONS

FOR THE YEAR ENDED DECEMBER 31, 2017

Employer	2018 Pension Fund Appropriation	Current Direct E.R.I. Appropriation	FY2018 Total Appropriation	Remaining Direct E.R.I. Liability	Allocated Net Pension Liability	Share of Net Pension Liability including E.R.I.	Percent of Total Net Pension Liability including E.R.I.
Retirement Board	$ 117,123	$ -	$ 117,123	$ -	$ 1,389,511	$ 1,389,511	0.369%
Town of Boxford	1,171,226	-	1,171,226	-	13,895,133	13,895,133	3.692%
Town of Essex	560,289	-	560,289	-	6,647,132	6,647,132	1.766%
Town of Georgetown	1,623,889	79,230	1,703,119	92,900	19,265,416	19,358,316	5.144%
Town of Groveland	699,570	7,747	707,317	67,694	8,299,524	8,367,218	2.223%
Town of Hamilton	804,031	-	804,031	-	9,538,820	9,538,820	2.535%
Town of Ipswich	3,263,604	-	3,263,604	-	38,718,599	38,718,599	10.288%
Town of Lynnfield	2,513,386	145,297	2,658,683	265,488	29,818,202	30,083,690	7.993%
Town of Manchester-by-the-Sea	1,066,765	-	1,066,765	-	12,655,836	12,655,836	3.363%
Town of Merrimac	775,542	45,865	821,407	49,910	9,200,833	9,250,743	2.458%
Town of Middleton	1,658,709	-	1,658,709	-	19,678,511	19,678,511	5.229%
Town of Nahant	800,865	-	800,865	-	9,501,267	9,501,267	2.525%
Town of Newbury	601,440	-	601,440	-	7,135,340	7,135,340	1.896%
Town of North Andover	4,852,672	-	4,852,672	-	57,570,919	57,570,919	15.297%
Town of Rockport	1,760,004	7,966	1,767,970	7,541	20,880,253	20,887,794	5.550%
Town of Rowley	870,506	-	870,506	-	10,327,461	10,327,461	2.744%
Town of Salisbury	1,187,053	102,302	1,289,355	96,842	14,082,902	14,179,744	3.768%
Town of Topsfield	1,076,261	-	1,076,261	-	12,768,498	12,768,498	3.393%
Town of Wenham	680,577	-	680,577	-	8,074,199	8,074,199	2.145%
Town of West Newbury	576,116	29,371	605,487	27,803	6,834,905	6,862,708	1.823%
East Essex Veterans District	31,655	-	31,655	-	375,542	375,542	0.100%
Byfield Water District	22,159	-	22,159	-	262,880	262,880	0.070%
Lynnfield Center Water District	85,468	-	85,468	-	1,013,969	1,013,969	0.269%
Lynnfield Water District	66,475	-	66,475	-	788,641	788,641	0.210%
NE Massachusetts Mosquito Control District	167,770	-	167,770	-	1,990,385	1,990,385	0.529%
Hamilton-Wenham Regional School	883,167	-	883,167	-	10,477,680	10,477,680	2.784%
Manchester-Essex Regional School	541,296	-	541,296	-	6,421,804	6,421,804	1.706%
Masconomet Regional School	541,296	-	541,296	-	6,421,804	6,421,804	1.706%
Pentucket Regional School	1,025,613	37,623	1,063,236	41,160	12,167,630	12,208,790	3.244%
Triton Regional School	1,095,254	30,664	1,125,918	29,027	12,993,827	13,022,854	3.460%
Essex Housing Authority	12,662	4,078	16,740	3,860	150,220	154,080	0.041%
Georgetown Housing Authority	50,648	-	50,648	-	600,870	600,870	0.160%
Groveland Housing Authority	22,159	-	22,159	-	262,880	262,880	0.070%
Hamilton Housing Authority	15,827	-	15,827	-	187,771	187,771	0.050%
Ipswich Housing Authority	113,957	27,004	140,961	25,563	1,351,958	1,377,521	0.366%
Lynnfield Housing Authority	18,993	-	18,993	-	225,328	225,328	0.060%
Manchester Housing Authority	22,159	-	22,159	-	262,880	262,880	0.070%
Middleton Housing Authority	15,827	-	15,827	-	187,771	187,771	0.050%
Nahant Housing Authority	3,166	8,342	11,508	72,893	37,552	110,445	0.029%
North Andover Housing Authority	136,116	13,552	149,668	24,762	1,614,841	1,639,603	0.436%
Rockport Housing Authority	37,986	-	37,986	-	450,652	450,652	0.120%
Rowley Housing Authority	12,662	-	12,662	-	150,218	150,218	0.040%
Salisbury Housing Authority	28,489	-	28,489	-	337,990	337,990	0.090%
Topsfield Housing Authority	15,827	-	15,827	-	187,771	187,771	0.050%
Wenham Housing Authority	28,489	6,105	34,594	5,779	337,991	343,770	0.091%
West Newbury Housing Authority	-	-	-	-	-	-	0.000%
Total	$ 31,654,748	$ 545,146	$ 32,199,894	$ 811,222	$ 375,544,116	$ 376,355,338	100.000%

See notes to schedule of employer allocations and schedule of pension amounts by employer.

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	Retirement Board	Town of Boxford	Town of Essex	Town of Georgetown
Net Pension Liability				
Beginning net pension liability	$ 1,382,393	$ 14,092,733	$ 6,643,169	$ 19,901,512
Ending net pension liability	$ 1,389,511	$ 13,895,133	$ 6,647,132	$ 19,358,316
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	114,083	1,140,831	545,749	1,589,374
Changes in proportion and differences between employer contributions and proportionate share of contributions	54,894	98,542	195,405	448,357
Total Deferred Outflows of Resources	$ 168,977	$ 1,239,373	$ 741,154	$ 2,037,731
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 19,664	$ 196,642	$ 94,069	$ 273,956
Net difference between projected and actual investment earnings on pension plan investments	61,177	611,775	292,660	852,308
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	43,489	55,615	7,362	214,422
Total Deferred Inflows of Resources	$ 124,330	$ 864,032	$ 394,091	$ 1,340,686
Pension Expense				
Proportionate share of plan pension expense	$ 147,662	$ 1,476,626	$ 706,386	$ 2,057,196
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	5,344	4,864	53,225	53,250
Total Employer Pension Expense	$ 153,006	$ 1,481,490	$ 759,611	$ 2,110,446
Contributions				
Statutory required contribution	$ 114,978	$ 1,149,773	$ 550,026	$ 1,671,923
Contribution in relation to statutory required contribution	(114,978)	(1,151,281)	(550,026)	(1,671,923)
Contribution deficiency/(excess)	$ -	$ (1,508)	$ -	$ -
Contributions as a percentage of covered payroll	23.62%	24.35%	26.06%	26.40%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2019	$ 24,252	$ 193,947	$ 143,678	$ 316,676
June 30, 2020	25,604	207,468	150,147	335,513
June 30, 2021	(2,362)	27,140	55,931	127,862
June 30, 2022	(2,847)	(53,214)	(2,693)	(83,006)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 44,647	$ 375,341	$ 347,063	$ 697,045
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 1,748,174	$ 17,481,767	$ 8,362,899	$ 24,355,113
Current discount rate (7.50%)	$ 1,389,511	$ 13,895,133	$ 6,647,132	$ 19,358,316
1% increase (8.50%)	$ 1,087,826	$ 10,878,275	$ 5,203,932	$ 15,155,311
Covered Payroll	$ 486,710	$ 4,727,147	$ 2,110,254	$ 6,333,757

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	Town of Groveland	Town of Hamilton	Town of Ipswich	Town of Lynnfield
Net Pension Liability				
Beginning net pension liability	$ 8,326,731	$ 10,559,951	$ 39,782,214	$ 30,649,501
Ending net pension liability	$ 8,367,218	$ 9,538,820	$ 38,718,599	$ 30,083,690
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	686,973	783,165	3,178,912	2,469,960
Changes in proportion and differences between employer contributions and proportionate share of contributions	178,221	233,029	-	173,692
Total Deferred Outflows of Resources	$ 865,194	$ 1,016,194	$ 3,178,912	$ 2,643,652
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 118,412	$ 134,992	$ 547,940	$ 425,740
Net difference between projected and actual investment earnings on pension plan investments	368,392	419,975	1,704,703	1,324,525
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	389,788	799,548	1,296,380	217,757
Total Deferred Inflows of Resources	$ 876,592	$ 1,354,515	$ 3,549,023	$ 1,968,022
Pension Expense				
Proportionate share of plan pension expense	$ 889,180	$ 1,013,684	$ 4,114,596	$ 3,196,972
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(94,640)	(167,268)	(414,052)	(41,508)
Total Employer Pension Expense	$ 794,540	$ 846,416	$ 3,700,544	$ 3,155,464
Contributions				
Statutory required contribution	$ 694,361	$ 789,304	$ 3,203,826	$ 2,609,984
Contribution in relation to statutory required contribution	(694,361)	(789,304)	(3,221,617)	(2,609,984)
Contribution deficiency/(excess)	$ -	$ -	$ (17,791)	$ -
Contributions as a percentage of covered payroll	25.06%	21.84%	23.43%	24.81%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2019	$ 19,220	$ (37,465)	$ 112,826	$ 367,867
June 30, 2020	27,362	(28,183)	150,501	397,141
June 30, 2021	(40,545)	(86,266)	(330,658)	31,764
June 30, 2022	(17,435)	(186,407)	(302,780)	(121,142)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (11,398)	$ (338,321)	$ (370,111)	$ 675,630
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 10,526,978	$ 12,000,995	$ 48,712,702	$ 37,848,938
Current discount rate (7.50%)	$ 8,367,218	$ 9,538,820	$ 38,718,599	$ 30,083,690
1% increase (8.50%)	$ 6,550,560	$ 7,467,788	$ 30,312,162	$ 23,552,032
Covered Payroll	$ 2,770,480	$ 3,613,506	$ 13,748,965	$ 10,519,886

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	Town of Manchester-by-the-Sea	Town of Merrimac	Town of Middleton	Town of Nahant
Net Pension Liability				
Beginning net pension liability	$ 13,247,938	$ 9,499,256	$ 19,507,109	$ 8,217,561
Ending net pension liability	$ 12,655,836	$ 9,250,743	$ 19,678,511	$ 9,501,267
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	1,039,081	759,513	1,615,663	780,082
Changes in proportion and differences between employer contributions and proportionate share of contributions	294,295	102,339	753,150	1,143,418
Total Deferred Outflows of Resources	$ 1,333,376	$ 861,852	$ 2,368,813	$ 1,923,500
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 179,104	$ 130,915	$ 278,488	$ 134,461
Net difference between projected and actual investment earnings on pension plan investments	557,211	407,292	866,406	418,322
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	231,485	42,565	41,209	599,249
Total Deferred Inflows of Resources	$ 967,800	$ 580,772	$ 1,186,103	$ 1,152,032
Pension Expense				
Proportionate share of plan pension expense	$ 1,344,927	$ 983,072	$ 2,091,225	$ 1,009,696
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	75,662	15,645	191,021	103,003
Total Employer Pension Expense	$ 1,420,589	$ 998,717	$ 2,282,246	$ 1,112,699
Contributions				
Statutory required contribution	$ 1,047,225	$ 806,361	$ 1,628,327	$ 786,196
Contribution in relation to statutory required contribution	(1,047,225)	(806,361)	(1,630,279)	(786,196)
Contribution deficiency/(excess)	$ -	$ -	$ (1,952)	$ -
Contributions as a percentage of covered payroll	23.87%	26.18%	22.07%	23.89%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2019	$ 247,881	$ 141,528	$ 458,804	$ 232,295
June 30, 2020	260,196	150,530	477,952	241,541
June 30, 2021	(18,103)	32,515	218,307	105,815
June 30, 2022	(124,398)	(43,493)	27,647	191,817
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 365,576	$ 281,080	$ 1,182,710	$ 771,468
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 15,922,581	$ 11,638,559	$ 24,757,958	$ 11,953,749
Current discount rate (7.50%)	$ 12,655,836	$ 9,250,743	$ 19,678,511	$ 9,501,267
1% increase (8.50%)	$ 9,908,049	$ 7,242,257	$ 15,405,987	$ 7,438,388
Covered Payroll	$ 4,387,209	$ 3,079,919	$ 7,387,882	$ 3,290,819

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	Town of Newbury	Town of North Andover	Town of Rockport	Town of Rowley
Net Pension Liability				
Beginning net pension liability	$ 7,526,365	$ 58,098,928	$ 20,942,698	$ 10,982,349
Ending net pension liability	$ 7,135,340	$ 57,570,919	$ 20,887,794	$ 10,327,461
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	585,832	4,726,742	1,714,949	847,915
Changes in proportion and differences between employer contributions and proportionate share of contributions	65,603	1,217,857	615,202	270,509
Total Deferred Outflows of Resources	$ 651,435	$ 5,944,599	$ 2,330,151	$ 1,118,424
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 100,978	$ 814,737	$ 295,601	$ 146,153
Net difference between projected and actual investment earnings on pension plan investments	314,155	2,534,734	919,648	454,698
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	214,328	59,010	8,362	316,906
Total Deferred Inflows of Resources	$ 629,461	$ 3,408,481	$ 1,223,611	$ 917,757
Pension Expense				
Proportionate share of plan pension expense	$ 758,270	$ 6,118,024	$ 2,219,733	$ 1,097,492
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(26,336)	337,994	174,176	19,599
Total Employer Pension Expense	$ 731,934	$ 6,456,018	$ 2,393,909	$ 1,117,091
Contributions				
Statutory required contribution	$ 590,423	$ 4,763,787	$ 1,735,586	$ 854,561
Contribution in relation to statutory required contribution	(590,423)	(4,769,727)	(1,746,856)	(854,561)
Contribution deficiency/(excess)	$ -	$ (5,940)	$ (11,270)	$ -
Contributions as a percentage of covered payroll	20.98%	23.11%	25.84%	24.12%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2019	$ 70,761	$ 1,121,413	$ 458,415	$ 160,134
June 30, 2020	77,704	1,177,432	478,740	170,183
June 30, 2021	(43,061)	366,769	183,384	(6,669)
June 30, 2022	(83,430)	(129,496)	(13,999)	(122,981)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 21,974	$ 2,536,118	$ 1,106,540	$ 200,667
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 8,977,125	$ 72,431,212	$ 26,279,382	$ 12,993,202
Current discount rate (7.50%)	$ 7,135,340	$ 57,570,919	$ 20,887,794	$ 10,327,461
1% increase (8.50%)	$ 5,586,142	$ 45,071,338	$ 16,352,715	$ 8,085,202
Covered Payroll	$ 2,814,757	$ 20,639,250	$ 6,761,272	$ 3,542,535

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	Town of Salisbury	Town of Topsfield	Town of Wenham	Town of West Newbury
Net Pension Liability				
Beginning net pension liability	$ 14,397,953	$ 13,593,536	$ 7,833,563	$ 7,273,721
Ending net pension liability	$ 14,179,744	$ 12,768,498	$ 8,074,199	$ 6,862,708
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	1,164,199	1,048,331	662,915	563,448
Changes in proportion and differences between employer contributions and proportionate share of contributions	590,534	222,057	387,279	95,476
Total Deferred Outflows of Resources	$ 1,754,733	$ 1,270,388	$ 1,050,194	$ 658,924
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 200,670	$ 180,698	$ 114,265	$ 97,120
Net difference between projected and actual investment earnings on pension plan investments	624,306	562,172	355,491	302,151
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	300,225	401,362	50,077	311,212
Total Deferred Inflows of Resources	$ 1,125,201	$ 1,144,232	$ 519,833	$ 710,483
Pension Expense				
Proportionate share of plan pension expense	$ 1,506,871	$ 1,356,900	$ 858,039	$ 729,294
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	38,531	(23,804)	95,032	(74,641)
Total Employer Pension Expense	$ 1,545,402	$ 1,333,096	$ 953,071	$ 654,653
Contributions				
Statutory required contribution	$ 1,265,738	$ 1,056,547	$ 668,111	$ 594,396
Contribution in relation to statutory required contribution	(1,273,581)	(1,058,923)	(668,111)	(594,396)
Contribution deficiency/(excess)	$ (7,843)	$ (2,376)	$ -	$ -
Contributions as a percentage of covered payroll	23.18%	24.25%	23.96%	23.82%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2019	$ 231,487	$ 149,948	$ 204,905	$ 18,746
June 30, 2020	245,285	162,373	212,762	25,424
June 30, 2021	161,870	(29,333)	79,449	(21,880)
June 30, 2022	(9,110)	(156,832)	33,245	(73,849)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 629,532	$ 126,156	$ 530,361	$ (51,559)
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 17,839,842	$ 16,064,323	$ 10,158,324	$ 8,634,121
Current discount rate (7.50%)	$ 14,179,744	$ 12,768,498	$ 8,074,199	$ 6,862,708
1% increase (8.50%)	$ 11,101,092	$ 9,996,251	$ 6,321,160	$ 5,372,703
Covered Payroll	$ 5,495,084	$ 4,366,319	$ 2,788,482	$ 2,495,211

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	East Essex Veterans District	Byfield Water District	Lynnfield Center Water District	Lynnfield Water District
Net Pension Liability				
Beginning net pension liability	$ 345,598	$ 268,799	$ 921,596	$ 883,196
Ending net pension liability	$ 375,542	$ 262,880	$ 1,013,969	$ 788,641
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	30,833	21,583	83,250	64,750
Changes in proportion and differences between employer contributions and proportionate share of contributions	71,136	239	111,387	47,304
Total Deferred Outflows of Resources	$ 101,969	$ 21,822	$ 194,637	$ 112,054
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 5,315	$ 3,720	$ 14,350	$ 11,161
Net difference between projected and actual investment earnings on pension plan investments	16,534	11,574	44,643	34,722
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	43,125	86,158	211,637	57,408
Total Deferred Inflows of Resources	$ 64,974	$ 101,452	$ 270,630	$ 103,291
Pension Expense				
Proportionate share of plan pension expense	$ 39,908	$ 27,937	$ 107,753	$ 83,808
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	903	(27,081)	(33,191)	4,143
Total Employer Pension Expense	$ 40,811	$ 856	$ 74,562	$ 87,951
Contributions				
Statutory required contribution	$ 31,075	$ 21,753	$ 83,902	$ 65,257
Contribution in relation to statutory required contribution	(31,075)	(21,753)	(83,902)	(65,257)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	26.53%	24.12%	23.14%	23.89%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2019	$ 6,013	$ (23,504)	$ (19,393)	$ 14,875
June 30, 2020	6,379	(23,248)	(18,406)	15,642
June 30, 2021	16,808	(26,220)	(41,118)	(4,570)
June 30, 2022	7,795	(6,658)	2,924	(17,184)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 36,995	$ (79,630)	$ (75,993)	$ 8,763
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 472,478	$ 330,736	$ 1,275,696	$ 992,207
Current discount rate (7.50%)	$ 375,542	$ 262,880	$ 1,013,969	$ 788,641
1% increase (8.50%)	$ 294,006	$ 205,805	$ 793,820	$ 617,415
Covered Payroll	$ 117,124	$ 90,192	$ 362,590	$ 273,147

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	NE MA Mosquito Control District	Hamilton-Wenham Regional School	Manchester-Essex Regional School	Masconomet Regional School
Net Pension Liability				
Beginning net pension liability......	$ 1,958,391	$ 10,943,949	$ 6,643,169	$ 6,719,969
Ending net pension liability......	$ 1,990,385	$ 10,477,680	$ 6,421,804	$ 6,421,804
Deferred Outflows of Resources				
Differences between expected and actual experience......	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments......	-	-	-	-
Changes of assumptions......	163,416	860,248	527,249	527,249
Changes in proportion and differences between employer contributions and proportionate share of contributions......	81,649	101,331	10,568	-
Total Deferred Outflows of Resources......	$ 245,065	$ 961,579	$ 537,817	$ 527,249
Deferred Inflows of Resources				
Differences between expected and actual experience......	$ 28,168	$ 148,279	$ 90,881	$ 90,881
Net difference between projected and actual investment earnings on pension plan investments......	87,633	461,311	282,739	282,739
Changes of assumptions......	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions......	86,209	173,809	226,176	316,082
Total Deferred Inflows of Resources......	$ 202,010	$ 783,399	$ 599,796	$ 689,702
Pension Expense				
Proportionate share of plan pension expense......	$ 211,516	$ 1,113,457	$ 682,442	$ 682,442
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions......	(1,770)	2,411	(62,220)	(96,181)
Total Employer Pension Expense......	$ 209,746	$ 1,115,868	$ 620,222	$ 586,261
Contributions				
Statutory required contribution......	$ 164,697	$ 866,990	$ 531,381	$ 531,381
Contribution in relation to statutory required contribution......	(164,697)	(866,990)	(531,381)	(531,381)
Contribution deficiency/(excess)......	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll......	30.90%	23.37%	30.00%	21.59%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2019......	$ 25,315	$ 144,990	$ 25,167	$ (8,794)
June 30, 2020......	27,252	155,186	31,416	(2,545)
June 30, 2021......	(7,995)	(23,466)	(59,645)	(77,886)
June 30, 2022......	(1,517)	(98,530)	(58,917)	(73,228)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense......	$ 43,055	$ 178,180	$ (61,979)	$ (162,453)
Discount Rate Sensitivity				
1% decrease (6.50%)......	$ 2,504,147	$ 13,182,195	$ 8,079,410	$ 8,079,410
Current discount rate (7.50%)......	$ 1,990,385	$ 10,477,680	$ 6,421,804	$ 6,421,804
1% increase (8.50%)......	$ 1,558,240	$ 8,202,806	$ 5,027,526	$ 5,027,526
Covered Payroll......	$ 532,944	$ 3,709,896	$ 1,771,429	$ 2,460,943

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	Pentucket Regional School	Triton Regional School	Essex Housing Authority	Georgetown Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 13,822,227	$ 13,074,496	$ 122,774	$ 614,397
Ending net pension liability	$ 12,208,790	$ 13,022,854	$ 154,080	$ 600,870
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	1,002,378	1,069,215	12,650	49,333
Changes in proportion and differences between employer contributions and proportionate share of contributions	207,790	599,444	64,025	22,312
Total Deferred Outflows of Resources	$ 1,210,168	$ 1,668,659	$ 76,675	$ 71,645
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 172,777	$ 184,298	$ 2,181	$ 8,503
Net difference between projected and actual investment earnings on pension plan investments	537,529	573,370	6,784	26,455
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	1,115,969	-	446	1,231
Total Deferred Inflows of Resources	$ 1,826,275	$ 757,668	$ 9,411	$ 36,189
Pension Expense				
Proportionate share of plan pension expense	$ 1,297,419	$ 1,383,928	$ 16,375	$ 63,855
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(195,340)	210,951	23,065	6,374
Total Employer Pension Expense	$ 1,102,079	$ 1,594,879	$ 39,440	$ 70,229
Contributions				
Statutory required contribution	$ 1,043,761	$ 1,105,295	$ 16,433	$ 50,648
Contribution in relation to statutory required contribution	(1,043,761)	(1,105,295)	(16,433)	(50,648)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	27.38%	27.02%	53.48%	21.40%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2019	$ (29,204)	$ 388,164	$ 25,162	$ 14,551
June 30, 2020	(17,324)	400,837	25,312	15,135
June 30, 2021	(253,865)	131,537	10,423	7,420
June 30, 2022	(315,714)	(9,547)	6,367	(1,650)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (616,107)	$ 910,991	$ 67,264	$ 35,456
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 15,360,142	$ 16,384,334	$ 193,851	$ 755,968
Current discount rate (7.50%)	$ 12,208,790	$ 13,022,854	$ 154,080	$ 600,870
1% increase (8.50%)	$ 9,558,065	$ 10,195,382	$ 120,627	$ 470,411
Covered Payroll	$ 3,812,481	$ 4,089,929	$ 30,727	$ 236,619

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	Groveland Housing Authority	Hamilton Housing Authority	Ipswich Housing Authority	Lynnfield Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 345,598	$ 115,199	$ 1,394,152	$ 268,799
Ending net pension liability	$ 262,880	$ 187,771	$ 1,377,521	$ 225,328
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	21,583	15,417	113,098	18,500
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	57,446	51,726	34
Total Deferred Outflows of Resources	$ 21,583	$ 72,863	$ 164,824	$ 18,534
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 3,720	$ 2,657	$ 19,494	$ 3,189
Net difference between projected and actual investment earnings on pension plan investments	11,574	8,267	60,649	9,921
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	78,673	21,928	50,920	29,337
Total Deferred Inflows of Resources	$ 93,967	$ 32,852	$ 131,063	$ 42,447
Pension Expense				
Proportionate share of plan pension expense	$ 27,934	$ 19,951	$ 146,390	$ 23,946
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(21,055)	7,369	(8,982)	(7,460)
Total Employer Pension Expense	$ 6,879	$ 27,320	$ 137,408	$ 16,486
Contributions				
Statutory required contribution	$ 21,753	$ 15,827	$ 140,961	$ 18,645
Contribution in relation to statutory required contribution	(21,753)	(15,827)	(140,961)	(18,645)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	26.40%	26.40%	34.02%	20.79%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2019	$ (17,478)	$ 9,924	$ 9,763	$ (4,394)
June 30, 2020	(17,222)	10,107	11,104	(4,175)
June 30, 2021	(20,662)	7,916	10,909	(6,994)
June 30, 2022	(17,022)	12,064	1,985	(8,350)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (72,384)	$ 40,011	$ 33,761	$ (23,913)
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 330,736	$ 236,239	$ 1,733,089	$ 283,490
Current discount rate (7.50%)	$ 262,880	$ 187,771	$ 1,377,521	$ 225,328
1% increase (8.50%)	$ 205,805	$ 147,003	$ 1,078,439	$ 176,405
Covered Payroll	$ 82,391	$ 59,952	$ 414,348	$ 89,686

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	Manchester Housing Authority	Middleton Housing Authority	Nahant Housing Authority	North Andover Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 307,199	$ 191,999	$ 229,804	$ 1,726,009
Ending net pension liability	$ 262,880	$ 187,771	$ 110,445	$ 1,639,603
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	21,583	15,417	9,068	134,616
Changes in proportion and differences between employer contributions and proportionate share of contributions	39	170	1,604	7,189
Total Deferred Outflows of Resources	$ 21,622	$ 15,587	$ 10,672	$ 141,805
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 3,720	$ 2,657	$ 1,563	$ 23,203
Net difference between projected and actual investment earnings on pension plan investments	11,574	8,267	4,863	72,188
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	29,238	50,046	111,855	89,531
Total Deferred Inflows of Resources	$ 44,532	$ 60,970	$ 118,281	$ 184,922
Pension Expense				
Proportionate share of plan pension expense	$ 27,935	$ 19,954	$ 11,736	$ 174,239
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(7,414)	(19,675)	(31,936)	(28,611)
Total Employer Pension Expense	$ 20,521	$ 279	$ (20,200)	$ 145,628
Contributions				
Statutory required contribution	$ 21,753	$ 15,537	$ 11,297	$ 146,927
Contribution in relation to statutory required contribution	(21,753)	(15,537)	(11,297)	(146,927)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	16.71%	23.13%	28.28%	27.32%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2019	$ (3,837)	$ (17,120)	$ (30,433)	$ (6,299)
June 30, 2020	(3,581)	(16,937)	(30,326)	(4,704)
June 30, 2021	(6,945)	(9,013)	(24,605)	(15,091)
June 30, 2022	(8,547)	(2,313)	(22,245)	(17,023)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (22,910)	$ (45,383)	$ (107,609)	$ (43,117)
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 330,736	$ 236,239	$ 138,954	$ 2,062,820
Current discount rate (7.50%)	$ 262,880	$ 187,771	$ 110,445	$ 1,639,603
1% increase (8.50%)	$ 205,805	$ 147,003	$ 86,466	$ 1,283,619
Covered Payroll	$ 130,158	$ 67,172	$ 39,940	$ 537,818

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	Rockport Housing Authority	Rowley Housing Authority	Salisbury Housing Authority	Topsfield Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 806,396	$ 153,599	$ 345,598	$ 307,199
Ending net pension liability	$ 450,652	$ 150,218	$ 337,990	$ 187,771
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	-	-	-
Changes of assumptions	37,000	12,333	27,750	15,417
Changes in proportion and differences between employer contributions and proportionate share of contributions	90,403	295	14,118	63,227
Total Deferred Outflows of Resources	$ 127,403	$ 12,628	$ 41,868	$ 78,644
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 6,378	$ 2,126	$ 4,783	$ 2,657
Net difference between projected and actual investment earnings on pension plan investments	19,841	6,614	14,881	8,267
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	257,718	1,148	41,774	86,791
Total Deferred Inflows of Resources	$ 283,937	$ 9,888	$ 61,438	$ 97,715
Pension Expense				
Proportionate share of plan pension expense	$ 47,890	$ 15,961	$ 35,917	$ 19,954
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(32,329)	(405)	(6,710)	(2,119)
Total Employer Pension Expense	$ 15,561	$ 15,556	$ 29,207	$ 17,835
Contributions				
Statutory required contribution	$ 37,290	$ 12,430	$ 28,489	$ 15,537
Contribution in relation to statutory required contribution	(37,290)	(12,430)	(28,489)	(15,537)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	24.72%	22.89%	28.53%	25.84%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2019	$ (26,197)	$ 1,639	$ (2,111)	$ 436
June 30, 2020	(25,758)	1,785	(1,782)	619
June 30, 2021	(41,736)	104	(11,377)	(1,614)
June 30, 2022	(62,843)	(788)	(4,300)	(18,512)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ (156,534)	$ 2,740	$ (19,570)	$ (19,071)
Discount Rate Sensitivity				
1% decrease (6.50%)	$ 566,975	$ 188,993	$ 425,232	$ 236,239
Current discount rate (7.50%)	$ 450,652	$ 150,218	$ 337,990	$ 187,771
1% increase (8.50%)	$ 352,808	$ 117,604	$ 264,607	$ 147,003
Covered Payroll	$ 150,827	$ 54,311	$ 99,849	$ 60,117

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2017

	Wenham Housing Authority	West Newbury Housing Authority	Totals
Net Pension Liability			
Beginning net pension liability	$ 318,539	$ -	$ 385,287,832
Ending net pension liability	$ 343,770	$ -	$ 376,355,338
Deferred Outflows of Resources			
Differences between expected and actual experience	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	-	-
Changes of assumptions	28,225	-	30,899,878
Changes in proportion and differences between employer contributions and proportionate share of contributions	49,679	-	8,792,974
Total Deferred Outflows of Resources	$ 77,904	$ -	$ 39,692,852
Deferred Inflows of Resources			
Differences between expected and actual experience	$ 4,865	$ -	$ 5,326,131
Net difference between projected and actual investment earnings on pension plan investments	15,136	-	16,570,176
Changes of assumptions	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	11,401	14,013	8,792,974
Total Deferred Inflows of Resources	$ 31,402	$ 14,013	$ 30,689,281
Pension Expense			
Proportionate share of plan pension expense	$ 36,530	$ -	$ 39,995,022
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	8,536	(6,370)	-
Total Employer Pension Expense	$ 45,066	$ (6,370)	$ 39,995,022
Contributions			
Statutory required contribution	$ 33,960	$ -	$ 31,614,412
Contribution in relation to statutory required contribution	(33,960)	-	(31,663,092)
Contribution deficiency/(excess)	$ -	$ -	$ (48,680)
Contributions as a percentage of covered payroll	30.96%	N/A	24.22%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense			
June 30, 2019	$ 13,214	$ (6,370)	$ 5,121,397
June 30, 2020	13,549	(6,370)	5,487,620
June 30, 2021	13,024	(1,273)	375,995
June 30, 2022	6,715	-	(1,981,441)
Total Deferred (Inflows)/Outflows Recognized in Future Pension Expense	$ 46,502	$ (14,013)	$ 9,003,571
Discount Rate Sensitivity			
1% decrease (6.50%)	$ 432,505	$ -	$ 473,500,765
Current discount rate (7.50%)	$ 343,770	$ -	$ 376,355,338
1% increase (8.50%)	$ 269,132	$ -	$ 294,642,498
Covered Payroll	$ 109,676	$ -	$ 130,743,710

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(concluded)

NOTE I – Schedule of Employer Allocations

Governmental Accounting Standards Board (GASB) Statement #68 requires employers participating in a cost-sharing pension plan to recognize pension liabilities as employees provide services to the government and earn their pension benefits. For the first time, employers participating in cost-sharing plans are required to recognize their proportionate share of the plan's collective pension amounts for all benefits provided through the plan including the net pension liability, deferred outflows of resources, deferred inflows of resources, contributions and pension expense.

GASB Statement #68 requires the allocation of the collective pension amounts be consistent with the manner in which contributions to the plan are determined. As permissible under GASB Statement #68, The Schedule of Employer Allocations is used to demonstrate the allocation of Essex Regional Retirement System's collective pension amounts.

Massachusetts General Law (MGL) Chapter 32 Section 22 Paragraph 7c dictates that Massachusetts cost sharing defined benefit pension plans allocate the annual required pension fund appropriation to employer units based on their proportionate share of the aggregate of the annual rates of regular compensation of all members in service of the system who are employees of any government unit at the close of business on the September 30th immediately preceding the fiscal year. Accordingly, the proportionate aggregate rates of regular compensation as of the close of business on September 30, 2016 were applied to allocate the System's fiscal year 2017 pension fund appropriation by member unit.

When a member unit accepts an Early Retirement Incentive Program (E.R.I. or ERIP), PERAC completes an analysis of the costs and liabilities attributable to the additional benefits payable in accordance with the ERIP. The accrued liability for the members who accept the ERIP as retirees including the ERIP less the accrued liability for the members as active employees excluding the ERIP represents the increase in accrued liability due to the ERIP. The net increase is amortized for each member unit accepting the ERIP, and is separately identified in the system's funding schedule. The 2002 ERIP amortization is straight line ending in fiscal 2019, except Nahant Housing which is increasing at 4.5% per year ending in 2028 and Essex Regional Retirement Board which was straight line and ended in fiscal 2012. The 2003 ERI amortization is straight line ending in fiscal 2020, except for Groveland which is increasing at 4.5% per year ending in 2028 and Essex Regional Retirement Board which was straight line and ended in fiscal 2012.

The allocation percentage of the total net pension liability is a blended rate of the following items. (1) The proportionate share of active employer's covered payroll is applied to the fiscal year 2017 pension fund appropriation calculated by the actuary. (2) Current Direct E.R.I. appropriation is a direct current charge calculated by PERAC for only the employers that accepted the ERIP. This direct charge backed out of the total pension fund appropriation to calculate the percentage to be allocated (3) Remaining Direct E.R.I. liability is the future E.R.I. liability associated directly to those employers that accepted the ERIP. This direct liability is added back to those employers once the non-ERIP liability has been allocated.

NOTE II – Schedule of Pension Amounts by Employer

The Schedule of Pension Amounts by Employer presents the net pension liability, the various categories of deferred outflows of resources and deferred inflows of resources, contributions and pension expense for all participating employers including differences between expected and actual economic experience; differences between projected and actual investment earnings, net; and changes of assumptions.

NOTE III – CHANGES IN ACTUARIAL ASSUMPTIONS AND PLAN PROVISIONS

Effective January 1, 2018 the following changes were made.

Actuarial Assumptions:

- The net investment return assumption and discount rate were lowered from 7.75% to 7.50%.
- The inflation rate was lowered from 4.00% to 2.75%.
- The assumed interest on employee contributions was increased from 2.0% to 3.75%.
- The administrative expense assumption was lowered from $1,127,500 to $1,000,000.
- The retirement rates for employees in Groups 1 and 2 hired after April 1, 2012 and in Group 4 were revised to match the rates for employees hired before April 1, 2012 and there were minor changes to the rates prior to age 54 for Group 4 employees.
- The percentage of accidental disability retirees who are expected to die from the same cause as the disability was lowered from 40% to 20% for groups 1 and 2 employees and increased from 40% to 60% for Group 4 employees.
- The allowance for net 3(8)(c) payments was changed from an estimated liability to a term cost added to the service cost.

Plan Provisions:

None.

ESSEX REGIONAL RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2016

ESSEX REGIONAL RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2016

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Independent Auditor's Report

To the Honorable Essex Retirement Board
Essex Regional Retirement System
Danvers, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of the Essex Regional Retirement System (ERRS) as of and for the year ended December 31, 2016, and the related notes to the financial statements, which collectively comprise the Essex Regional Retirement System's 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 an opinion 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 opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Essex Regional Retirement System as of December 31, 2016 and the results of its operations and changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis; the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Return 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 Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated June 15, 2017 on our consideration of the Essex Regional Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is 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 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 Essex Regional Retirement System's internal control over financial reporting and compliance.

Restriction on Use

This report is intended solely for the information and use of Essex Regional Retirement System, the Public Employee Retirement Administration Commission and all member units and is not intended to be and should not be used by anyone other than these specified parties.

Powers & Sullivan LLC

June 15, 2017

Management's Discussion and Analysis

As management of the Essex Regional Retirement System, we offer readers of these financial statements this narrative overview and analysis of the financial activities for the year ended December 31, 2016. The System complies with financial reporting requirements issued by the Governmental Accounting Standards Board (GASB).

The GASB is the authoritative standard setting body that provides guidance on how to prepare financial statements in conformity with generally accepted accounting principles (GAAP). Users of these financial statements rely on the GASB to establish consistent reporting standards for all governments in the United States. This consistent application is the only way users can assess the financial condition of a public retirement system compared to others.

Financial Highlights

- The System's assets exceeded its liabilities at the close of the most recent year by $402.9 million (net position).
- The System's net position increased by $24.6 million for the year ended December 31, 2016.
- Total investment income was $28.6 million; investment expenses were $2.2 million; and net investment income was $26.4 million.
- Total contributions were $46.5 million including $29.4 from employers, and $12.9 from members.
- Retirement benefits, refunds and transfers amounted to $47.3 million.
- Administrative expenses were $976,000.
- The Total Pension Liability is $788 million as of December 31, 2016 while the Net Pension Liability is $385 million.
- The Plan fiduciary net position as a percentage of the total pension liability is 51.12%.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the System fiduciary financial statements. These fiduciary financial statements comprise of four components: 1) management's discussion and analysis, 2) fiduciary financial statements, 3) notes to the financial statements and 4) required supplementary information.

Fiduciary Financial Statements

The *statement of net position* presents information on all assets and deferred outflows less deferred inflows and liabilities with the difference reported as *net position.* Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position is improving or deteriorating.

The *statement of changes in fiduciary net position* presents information showing how the system's net position changed during the most recent year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows.* Thus, additions and deductions are reported in this statement for some items that will only result in cash flows in future periods.

Notes to the financial statements

The notes provide additional information that is essential to a full understanding of the data provided in the fiduciary financial statements.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Return 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.

Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of the System's financial position. The System's net position exceeded liabilities by $402.9 million at the close of 2016.

The assets accumulated are held to provide pension benefits for qualified retirees along with active and inactive employees of the member units. At year end the system's net position include investments of $397 million, cash of $1.9 million, accounts receivable of $4.7 million, and capital assets of $205,000.

In 2016 the System's contributions were $46.5 million and net investment income was $26.4 million while retirement benefit payments, refunds, transfers and administration expenses were $48.4 million which resulted in a current increase of $24.5 million. In 2015 the System's contributions were $48.2 million and net investment income was $4.1 million while retirement benefit payments, refunds, transfers and administration expenses were $45.4 million which resulted in a prior year increase of $6.9 million.

In 2015 the System recognized a contribution from Essex North Shore Agricultural and Technical School District (Essex Tech) as the successor agency to both the Essex Agricultural and Technical High School and the North Shore Vocational Regional School. Legislation requires Essex Tech to reimburse ERRS for the actuarially determined liability associated with the retired members from Essex Agricultural and Technical High School who remain with ERRS. Accordingly in 2015, PERAC approved a funding schedule for Essex Tech to pay ERRS in equal annual payments of $421,947 through 2033. The $3,734,809 present value of these payments has been recorded as an intergovernmental receivable at year end.

The main difference of the increase in net position between years was the change in net investment income between years. Net investment income was $26.4 million and $4.1 million in 2016 and 2015 respectively. The annual money weighted rate of return was 7.33% and 1.04% in 2016 and 2015 respectively. Fluctuations in the system's annual investment returns are expected.

The following tables present summarized financial information for the past two years.

	2016	2015
Statement of Fiduciary Net Position		
Assets:		
Cash..	$ 1,881,650	$ 994,843
Investments..	397,333,654	372,507,562
Receivables...	4,726,786	5,531,842
Capital assets, net of accumulated depreciation.........	204,741	205,425
Total assets...	404,146,831	379,239,672
Liabilities:		
Accounts payable..	1,216,758	900,910
Abandoned property...	190	-
Total liabilities...	1,216,948	900,910
Net Position Restricted for Pension Benefits...............	$ 402,929,883	$ 378,338,762

	2016	2015
Statement of Changes in Fiduciary Net Position		
Additions:		
Contributions:		
Member contributions.....................................	$ 16,673,138	$ 15,676,204
Employer contributions..................................	29,431,067	27,966,800
Other contributions..	388,786	390,749
Essex Agricultural and Technical High School......	-	4,156,756
Total contributions..................................	46,492,991	48,190,509
Net investment income (loss):		
Total investment income (loss)........................	28,610,761	6,246,628
Less, investment expenses.............................	(2,203,765)	(2,142,796)
Net investment income (loss).........................	26,406,996	4,103,832
Total additions..	72,899,987	52,294,341
Deductions:		
Administration..	975,517	949,046
Retirement benefits, refunds and transfers.............	47,333,349	44,477,244
Total deductions.....................................	48,308,866	45,426,290
Net increase (decrease) in fiduciary net position..........	24,591,121	6,868,051
Fiduciary net position at beginning of year................	378,338,762	371,470,711
Fiduciary net position at end of year........................	$ 402,929,883	$ 378,338,762

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all 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 addressed to the System's Board, 491 Maple St #202, Danvers, MA 01923.

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STATEMENT OF FIDUCIARY NET POSITION

DECEMBER 31, 2016

Assets		
Cash…………………………………………………………	$	1,881,650
Investments:		
PRIT funds………………………………………………		382,842,963
Money market mutual funds…………………………		110,447
Pooled alternative investments………………………		11,027,929
Pooled real estate funds………………………………		3,346,715
Fixed income investments……………………………		5,600
Total investments……………………………………		397,333,654
Receivables:		
Members contributions………………………………		991,836
Essex Agricultural and Technical High School……		3,734,809
Other……………………………………………………		141
Total receivables……………………………………		4,726,786
Capital assets, net of accumulated depreciation……		204,741
Total assets…………………………………………		404,146,831
Liabilities		
Accounts payable……………………………………		1,216,758
Abandoned property…………………………………		190
Total liabilities………………………………………		1,216,948
Net Position Restricted for Pensions…………………	$	402,929,883

See notes to financial statements.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

FOR THE YEAR ENDED DECEMBER 31, 2016

Additions:		
Contributions:		
Member contributions	$	12,864,434
Retirement benefits - transfers from other systems		2,340,646
Retirement benefits - 3(8)c contributions from other systems		1,468,058
Retirement benefits - Recovery of 91A Overearnings		10,923
Employer contributions		29,420,144
Employer contributions - federal grant reimbursements		43,170
Retirement benefits - state COLA reimbursements		345,616
Total contributions		46,492,991
Net investment income (loss):		
Total investment income (loss)		28,610,761
Less, investment expenses		(2,203,765)
Net investment income (loss)		26,406,996
Total additions		72,899,987
Deductions:		
Administration		975,517
Retirement benefits - transfers to other systems		2,591,978
Retirement benefits - 3(8)c contributions to other systems		2,610,806
Retirement benefits and refunds		42,130,565
Total deductions		48,308,866
Net increase (decrease) in fiduciary net position		24,591,121
Fiduciary net position at beginning of year		378,338,762
Fiduciary net position at end of year	$	402,929,883

See notes to financial statements.

NOTE 1 – PLAN DESCRIPTION

Essex Regional Retirement System is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of governmental member units deemed eligible by the Essex Regional Retirement Board (the Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the Plan is mandatory immediately upon the commencement of employment for all non-teaching permanent, full time employees. The Plan is administered by the Essex Regional Retirement System (the System).

Originally instituted in 1937, as part of Essex County government, the Board served as the regional retirement system for Essex County upon the abolition of county government in 1996 and the current system structure was created by special legislation in July, 2010 (Chapter 34B, Section 19A of the Massachusetts General Laws). The System is governed by a five member Board who establish the policies under which the System operates. Board members also approve all of the System's financial transactions, including the approval of retirement benefits to members. Board members are appointed or elected as specified by MGL Ch. 34B, Section 19A for terms ranging from 3 to 5 years.

The day-to-day operations of the System are managed by the Executive Director. The legislative body for the System is an Advisory Council consisting of full-time treasurers or other qualified officials of the member units. The Advisory Council meets twice annually and is responsible for supervising and certifying the procedures involved in the election of members to the retirement board.

As of December 31, 2016, the System had 1,798 retirees and beneficiaries, 2,722 active participants and 1,798 inactive participants with a vested right to retirement benefits or to receive a refund of their contributions.

The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The Public Employee Retirement Administration Commission (PERAC) is the state agency responsible for oversight of the Commonwealth's public retirement systems.

Massachusetts Contributory Retirement System benefits are, with certain exceptions, uniform from system to system. The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For persons who became members on or after April 2, 2012, average salary is the average annual rate of regular compensation received during the five consecutive years that produce the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are three classes of membership in the retirement system: group 1, group 2, and group 4. Group 1 consists of general employees which includes clerical and administrative positions. Group 2 consists of positions that have been specified as hazardous. Lastly, group 4 consists of police officers, firefighters, and other hazardous positions.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of 20 years of service or upon reaching the age of 55 with 10 years of service if hired after 1978 and if classified in groups 1 or 2. A person who became a member on or after April 2, 2012 is eligible for a superannuation retirement allowance upon reaching the age of 60 with 10 years of service if in group 1, 50 years of age with 10 years of service if in group 2, and 55 years of age if hired prior to 1978 or if classified in group 4. Normal retirement for most employees occurs at age 65 (except for certain hazardous duty and public safety positions, whose normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension.

Active members contribute between 5% and 11% of their gross regular compensation. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Public Employee Retirement Administration Commission's (PERAC) actuary. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Any cost-of-living adjustments granted between 1981 and 1997 and any increase in other benefits imposed by the Commonwealth of Massachusetts' state law during those years are borne by the Commonwealth and are deposited into the Pension Fund. Cost-of-living adjustments granted after 1997 must be approved by the System and all costs are borne by the System.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current-year pension assessment. In past years, retirement systems were paying only the actual retirement benefits that were due each year. Systems had no statutory authorization to put aside money for the future benefits of employees who are currently employed. Large unfunded liabilities resulted from operating under this pay-as-you-go basis. In 1977, legislation authorized local governments to appropriate funds to meet future pension obligations. In 1983, additional legislation was passed requiring the transfer of investment earnings (in excess of the amount credited to member accounts) into the Pension Reserve Fund.

Administrative expenses, which were previously appropriated from the governmental entities whose employees are members of the system, are now paid from investment income.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent on several factors, including whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veterans' status and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions.

Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements of the Essex Regional Retirement System have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is the recognized standard-setting body for establishing governmental accounting and financial reporting principles.

ERRS is a special-purpose government engaged only in fiduciary activities. Accordingly, the financial statements are reported using the flow of economic resources measurement focus and use the accrual basis of accounting. Under this method, additions are recorded when earned and deductions are recorded when the liabilities are incurred.

Cash and Investments

Cash and cash equivalents are considered to be cash on hand, demand deposits and short-term investments with an original maturity of three months or less from the date of acquisition. Investments are carried at fair value. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market. The fair value of private equities are based on management's valuation of estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values. Real estate assets are reported at fair value utilizing an income approach to valuation along with independent appraisals and estimates by management.

Fair Value Measurements

The System reports required types of financial instruments in accordance with the fair value standards. These standards require an entity to maximize the use of observable inputs (such as quoted prices in active markets) and minimize the use of unobservable inputs (such as appraisals or valuation techniques) to determine fair value. Fair value standards also require the government to classify these financial instruments into a three-level hierarchy, based on the priority of inputs to the valuation technique or in accordance with net asset value practical expedient rules, which allow for either Level 2 or Level 3 depending on lock up and notice periods associated with the underlying funds.

Instruments measured and reported at fair value are classified and disclosed in one of the following categories:

Level 1 – Quoted prices are available in active markets for identical instruments as of the reporting date. Instruments, which are generally included in this category, include actively traded equity and debt securities, U.S. government obligations, and mutual funds with quoted market prices in active markets.

Level 2 – Pricing inputs are other than quoted in active markets, which are either directly or indirectly observable as of the reporting date, and fair value is determined through the use of models or other valuation methodologies. Certain fixed income securities, primarily corporate bonds, are classified as Level 2 because fair values are estimated using pricing models, matrix pricing, or discounted cash flows.

Level 3 – Pricing inputs are unobservable for the instrument and include situations where there is little, if any, market activity for the instrument. The inputs into the determination of fair value require significant management judgment or estimation.

In some instances the inputs used to measure fair value may fall into different levels of the fair value hierarchy and is based on the lowest level of input that is significant to the fair value measurement.

Market price is affected by a number of factors, including the type of instrument and the characteristics specific to the instrument. Instruments with readily available active quoted prices generally will have a higher degree of market price observability and a lesser degree of judgment used in measuring fair value. It is reasonably possible that change in values of these instruments will occur in the near term and that such changes could materially affect amounts reported in these financial statements. For more information on the fair value of the System's financial instruments see Note 4.

Accounts Receivable

Accounts receivable consist of member deductions, future appropriations from Essex Technical High School for the unfunded actuarial liability for retirees from Essex Agricultural and Technical School, pension fund appropriations, and federal grant reimbursements. These receivables are considered 100% collectible and

therefore do not report an allowance for uncollectibles.

Deferred Outflows/Inflows of Resources

In addition to assets, the statement of fiduciary net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *deferred outflows of resources*, represents a consumption of fiduciary net position that applies to a future period(s) and so will not be recognized as an outflow of resources (deduction) until then. The ERRS did not have any items that qualify for reporting in this category.

In addition to liabilities, the statement of fiduciary net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *deferred inflows of resources*, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (addition) until that time. The ERRS did not have any items that qualify for reporting in this category.

NOTE 3 – PLAN ADMINISTRATION

The System is administered by a five-person Board of Retirement. The first member shall be a chief executive or chief administrative officer of a member town, unit or district belonging to the Essex regional retirement system for a term of 3 years. This member shall be chosen by weighted vote of the chief executive or chief administrative officers of member towns, units or districts belonging to the Essex regional retirement system. The second member shall be a member of the regional retirement board advisory council, and shall be elected by a majority of those present and voting at a public meeting of the council and shall serve for a term of 3 years. The third and fourth members shall be elected by the members in or retired from service of the Essex county retirement system from among persons retired under the system and shall serve for a term of 3 years. The fifth member, who shall not be an employee, retiree or official of the retirement system, or of any of its constituent governmental units, shall be chosen by the other 4 members and shall serve for a term of 5 years.

First Member	Alan J. Benson	Term Expires:	12/1/2017
Second Member	Kevin A. Merz	Term Expires:	12/1/2018
Third Member	Susan J. Yaskell	Term Expires:	12/1/2019
Fourth Member	H. Joseph Maney	Term Expires:	12/1/2019
Fifth Member	Vincent R. Malgeri	Term Expires:	12/12/2020

Board members are required to meet at least once a month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the System. The Board must annually file a financial statement of condition for the System with PERAC.

The ERRS Advisory Council consists of the full time treasurers, elected or appointed, for each town, unit or district within the System. The members of the Advisory Council elect the second member of the Board of Retirement as well as a Chair from among its members. The ERRS Advisory Council is required by statute to meet twice per year, typically in the spring and fall. All ERRS Advisory Council meetings are open, public meetings and are subject to the Commonwealth's Open Meeting Law.

The investment of the System's funds is the responsibility of the Board. Disability retirement allowances must be approved by the Retirement Board and are then submitted to the PERAC Actuary for verification prior to payment.

Superannuation retirement allowances are not required to obtain PERAC's verification. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by two persons designated by the Board.

ERRS board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. The MACRS program for ERRS provides $50,000,000 fiduciary protection for Trustees and employees, as well as a $1,000,000 fidelity policy for crime coverage.

NOTE 4 – CASH AND INVESTMENTS

Custodial Credit Risk - Deposits

At December 31, 2016, the carrying amount of the System's deposits totaled $1,881,650 and the bank balance totaled $2,034,142 which was covered by Federal Depository Insurance.

Investments

The System's investments are as follows:

		Maturity
	Fair Value	**Over 10 Years**
Investment Type		
Debt Securities:		
Fixed Income……………………………	$ 5,600	$ 5,600
Other Investments:		
PRIT Pooled Funds……………….	382,842,963	
Money Market Mutual Funds.........	110,447	
Pooled Alternative Investments.....	11,027,929	
Pooled Real Estate Funds………..	3,346,715	
Total Investments......................	$ 397,333,654	

Approximately 96% of the Retirement System's investments are in Pension Reserve Investment Trust (PRIT) Pooled Funds. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board. The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The Administration does not have the ability to control any of the investment decisions relative to its funds in PRIT.

Approximately 4% of the System's funds are invested in pooled alternative investments and pooled real estate funds. The market values of assets in those funds are based on the quoted values obtained from each pool.

The Administration's annual money-weighted rate of return on pension plan investments was 7.33%. The money–weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested, measured monthly.

Fair Market Value of Investments

The retiree pension defined benefit plan holds significant amounts of investments that are measured at fair value on a recurring basis. Because investing is a key part of the plan's activities, the plan shows greater disaggregation in its disclosures. The plan chooses a tabular format for disclosing the levels within the fair value hierarchy.

The System categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles.

The System has the following recurring fair value measurements as of December 31, 2016:

		Fair Value Measurements Using		
Investment Type	12/31/2016	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				
Fixed Income…………………………………………………………………	$ 5,600	$ 5,600	$ -	$ -
Other Investments				
Money Market Mutual Funds…………………………………………….	110,447	110,447	-	-
Pooled Alternative Investments………………………………………….	11,027,929	-	-	11,027,929
Pooled Real Estate Funds……………………………………………….	3,346,715	-	-	3,346,715
Total Investments by fair value level……………………………………	14,490,691	$ 116,047	$ -	$ 14,374,644
Investments measured at the net asset value (NAV)…………….				
PRIT Investments……………………………………………………………	382,842,963			
Total Investments……………………………………………………………	$ 397,333,654			

Fixed Income, and Money Market Mutual Funds in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities. Pooled Alternative Investments and Pooled Real Estate Funds classified in level 3 are valued using either a discounted cash flow or market comparable companies technique.

PRIT Investments are valued using the net asset value (NAV) method. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board (PRIM). The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The System does not have the ability to control any of the investment decisions relative to its funds in PRIT.

NOTE 5 – RECEIVABLES

At December 31, 2016, receivables for the System are as follows:

	Gross Amount	Allowance for Uncollectibles	Net Amount
Receivables:			
Member contributions…………………..…………..	$ 991,836	$ -	$ 991,836
Essex Agricultural and Technical High School…..	3,734,809	-	3,734,809
Other……………………………………………….	141	-	141
Total…………………………………………………	$ 4,726,786	$ -	$ 4,726,786

As more fully described in Note 9, the intergovernmental receivable consists of the present value of a stream of future payments to be received from Essex Technical High School (Essex Tech), as the successor agency of Essex Agricultural and Technical School from fiscal year 2017 through fiscal year 2033 for the unfunded actuarial liability for its retirees in the Essex Regional Retirement System.

NOTE 6 – CAPITAL ASSETS

Capital assets are depreciated on a straight-line basis. The estimated useful lives of capital assets are 33 years for buildings and 5 to 20 years for equipment.

The majority of capital assets owned by the System consist of two condominiums in Danvers, Massachusetts that were purchased for the administrative offices of the System. Both units were purchased in fiscal year 2000 for a total of $375,250. Total capital asset activity for the year ended December 31, 2016, was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets being depreciated:				
Buildings…………………………………………………	$ 375,250	$ -	$ -	$ 375,250
Equipment……………………………………………….	15,580	13,690	-	29,270
Total capital assets being depreciated……………	390,830	13,690	-	404,520
Less accumulated depreciation for:				
Buildings…………………………………………………	(174,499)	(11,258)	-	(185,757)
Equipment……………………………………………….	(10,906)	(3,116)	-	(14,022)
Total accumulated depreciation……………………	(185,405)	(14,374)	-	(199,779)
Total capital assets being depreciated, net…………………	205,425	(684)	-	204,741
Total governmental activities capital assets, net………….	$ 205,425	$ (684)	$ -	$ 204,741

NOTE 7 – MEMBERSHIP

The following table represents the System's membership at December 31, 2016:

Active members	2,722
Inactive members entitled to a return of contributions	1,149
Inactive employees or beneficiaries currently receiving benefits	1,798
Total	5,669

NOTE 8 – ACTUARIAL VALUATION

The total pension liability was determined by an actuarial valuation as of January 1, 2016, using the following actuarial assumptions, applied to all periods included in the measurement that was updated to December 31, 2016:

Valuation date	January 1, 2016
Actuarial cost method	Entry Age Normal Cost Method.
Remaining amortization period	18 years for the fresh start base.
Amortization method	The total appropriation is set to increase annually by 7.41% for five years, then by 6.36% for one year and 4% increases annually thereafter until the final year which will be 3.89%.
Asset valuation method	Market value adjusted by accounts payable and receivables adjusted to phase in over 5 years investment gains or losses above or below the expected rate of investment return. The actuarial value of assets must be no less than 90% of the adjusted market value nor more than 110% of the adjusted market value.
Projected salary increases	3.75% Ultimate rate, with steps. 7.50% year one, 6.5% year two, 6.00% year three, 5.50% year four, 5.00% year five
Cost of living adjustments	3.0% of the first $13,000 of a members retirement allowance is assumed to be granted every year.
Rates of retirement	Varies based upon age for general employees, police and fire employees.
Rates of disability	Disability is assumed to be 45% ordinary and 55% accidental for Group 1 and 2 and 10% ordinary and 90% accidental for Group 4.

Mortality Rates:	
Pre-Retirement…………………….	The RP-2000 mortality table (sex-distinct) projected with scale BB and Generational Mortality. During employment the healthy employee mortality table is used. Post-employment the healthy annuitant table is used.
Disabled Retiree…………………	The RP-2000 mortality table for healthy annuitants (sex-distinct) projected with scale BB and Generational Mortality set-forward by 2 years. Death is assumed to be due to the same cause as the disability 40% of the time.
Investment rate of return/Discount rate………	7.75% per year

Components of the net pension liability as of December 31, 2016 were as follows:

Total pension liability………………………………………………	$	788,217,715
The pension plan's fiduciary net position…………………….		402,929,883
The net pension liability…………………………………………	$	385,287,832
The pension plan's fiduciary net position as a percentage of the total pension liability……………………………………		51.12%

Investment policy: The pension plan's policy in regard to the allocation of invested assets is established by PRIT and the Board. Plan assets are managed on a total return basis with a long-term objective of achieving a fully funded status for the benefits provided through the pension plan.

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. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of January 1, 2016 are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return	Long-Term Expected Asset Allocation
Global Equity		
Large Cap Equities……………………	7.50%	14.50%
Samll/Mid Cap Equities………………	7.75%	3.50%
International Equities………………	7.83%	16.00%
Emerging International Equities………	9.61%	6.00%
Core Fixed Income		
Core Bonds……………………………	4.00%	5.00%
20+ Year Treasuries…………………	3.75%	5.00%
TIPS……………………………………	3.75%	3.00%
Value Added Fixed Income		
High-Yield Bonds……………………	5.75%	1.50%
Bank Loans……………………………	6.00%	1.50%
EMD (External)………………………	5.75%	1.00%
EMD (Local Currency)………………	6.50%	2.00%
Private Debt…………………………	9.06%	4.00%
Private Equity…………………………	9.50%	10.00%
Real Estate……………………………	6.50%	10.00%
Timberland……………………………	6.00%	4.00%
Hedge Funds and Portfolio Completion..	6.48%	13.00%
Total Fund Expected Return/Total……	7.80%	100.00%

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

Sensitivity of the net position liability to changes in the discount rate. The following presents the net position liability, calculated using the discount rate of 7.75%, as well as what the net position liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75%) or 1-percentage-point higher (8.75%) than the current rate.

	1.0% Decrease (6.75%)	Current Discount Rate (7.75%)	1.0% Increase (8.75%)
Essex Regional Retirement System's net pension liability as of December 31, 2016…….	$ 471,944,872	$ 385,287,832	$ 321,176,656

Contributions: Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE 9 – ESSEX AGRICULTURAL AND TECHNICAL HIGH SCHOOL

Chapter 463 of the Acts of 2004 created the Essex North Shore Agricultural and Technical School District (Essex Tech). This legislation established Essex Tech as the successor agency to both the Essex Agricultural and Technical High School and the North Shore Vocational Regional School. Prior to July 1, 2014, the non-teacher employees of the Essex Agricultural and Technical High School were members of ERRS. The legislation required that all active and inactive members be transferred to the Salem Contributory Retirement System. Accordingly, as of June 30, 2015, all active and inactive members of ERRS have been transferred to the Salem Contributory Retirement System. Essex Tech, as the successor agency, is required to reimburse ERRS for the actuarially determined liability associated with the retired members from Essex Agricultural and Technical High School who remain with ERRS. Accordingly, PERAC approved a funding schedule that requires Essex Tech to pay ERRS equal annual assessments of $421,947 through 2033. The $3,734,809 present value of these payments has been recorded as an intergovernmental receivable by ERRS as of December 31, 2016.

NOTE 10 – COMMITMENTS AND CONTINGENCIES

Various legal actions and claims are pending against the System. Litigation is subject to many uncertainties, and the outcome of individual litigated matters is not always predictable. Although the amount of liability, if any, at December 31, 2016 cannot be ascertained, management believes any resulting liability should not materially affect the financial position at December 31, 2016.

NOTE 11 – IMPLEMENTATION OF NEW GASB PRONOUNCEMENTS

During 2016, the following GASB pronouncements were implemented:

- GASB Statement #72, *Fair Value Measurement and Application*. Notes to the basic financial statements were changed to provide additional disclosure on fair value measurement.

- GASB Statement #73, *Accounting and Financial Reporting for Pensions and Related Assets That Are Not within the Scope of GASB Statement 68, and Amendments to Certain Provisions of GASB Statements 67 and 68.* This pronouncement did not impact the basic financial statements.

- GASB Statement #76, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*. This pronouncement did not impact the basic financial statements.

- GASB Statement #78, *Pensions Provided through Certain Multiple-Employer Defined Benefit Pension Plans*. This pronouncement did not impact the basic financial statements.

- GASB Statement #79, *Certain External Investment Pools and Pool Participants*. The basic financial statements and related notes were updated to be in compliance with this pronouncement.

The following GASB pronouncements will be implemented in the future:

- *The* GASB issued Statement #82, *Pension Issues – an amendment of GASB Statements #67, #68, and #73,* which is required to be implemented in 2017.

Management is currently assessing the impact the implementation of these pronouncements will have on the basic financial statements.

NOTE 12 – SUBSEQUENT EVENTS

Management has evaluated subsequent events through June 15, 2017, which is the date the financial statements were available to be issued.

Required Supplementary Information

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

	2014	2015	2016
Total pension liability:			
Service cost	$ 14,800,758	$ 15,392,788	$ 16,634,897
Interest	54,243,222	56,453,975	57,096,460
Changes in benefit terms	-	-	4,350,523
Differences between expected and actual experience	-	-	(8,590,424)
Changes in assumptions	-	-	20,216,699
Benefit payments, including refunds or member contributions	(42,572,513)	(40,901,999)	(43,168,107)
Net change in total pension liability	26,471,467	30,944,764	46,540,048
Total pension liability, beginning	684,261,436	710,732,903	741,677,667
Total pension liability, ending **(a)**	$ 710,732,903	$ 741,677,667	$ 788,217,715
Plan fiduciary net position:			
Member contributions	$ 14,524,722	$ 12,491,708	$ 12,864,434
Employer contributions	26,140,616	27,966,800	29,463,314
Net investment income (loss)	29,322,861	4,103,832	26,406,996
Retirement benefits and refunds	(42,572,513)	(40,901,999)	(43,168,106)
Administrative expenses	(936,725)	(949,046)	(975,517)
Other contribution	-	4,156,756	-
Net increase (decrease) in fiduciary net position	26,478,961	6,868,051	24,591,121
Fiduciary net position at beginning of year	344,991,750	371,470,711	378,338,762
Fiduciary net position at end of year **(b)**	$ 371,470,711	$ 378,338,762	$ 402,929,883
Net pension liability - ending (a) - (b)	$ 339,262,192	$ 363,338,905	$ 385,287,832
Plan fiduciary net position as a percentage of the total pension liability	52.27%	51.01%	51.12%
Covered-employee payroll	$ 123,190,220	$ 128,258,043	$ 133,089,526
Net pension liability as a percentage of covered-employee payroll	275.40%	283.29%	289.50%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF CONTRIBUTIONS

	2014	2015	2016
Actuarially determined contribution……………………	$ 26,066,222	$ 32,050,432	$ 29,420,338
Contributions in relation to the actuarially determined contribution…………………………….	(26,066,222)	(32,123,557)	(29,463,314)
Contribution deficiency (excess)…………………	$ -	$ (73,125)	$ (42,976)
Covered-employee payroll…………………………….	$ 123,190,220	$ 128,258,043	$ 133,089,526
Contributions as a percentage of covered-employee payroll……………………………………	21.16%	25.05%	22.14%

Note: this schedule is intended to present information for 10 years. Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF INVESTMENT RETURN

	2014	2015	2016
Annual money-weighted rate of return, net of investment expense…………………………	8.48%	1.04%	7.80%

Note: this schedule is intended to present information for 10 years. Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

NOTE A – CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

The Schedule of Changes in the Net Pension Liability and Related Ratios includes the detailed changes in the systems total pension liability, changes in the systems net position, and the ending net pension liability. It also demonstrates the plan's net position as a percentage of the total pension liability and the net pension liability as a percentage of covered payroll.

NOTE B – CONTRIBUTIONS

Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The total appropriations are payable on July 1 and January 1. Employers may choose to pay the entire appropriation in July at a discounted rate. Accordingly, actual employer contributions may be less than the "total appropriation". The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE C – MONEY WEIGHTED RATE OF RETURN

The money weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. A money weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. Inputs to the money weighted rate of return calculation are determined monthly.

Audit of Specific Elements, Accounts and Items of Financial Statements

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Independent Auditor's Report

To the Honorable Essex Retirement Board
Essex Regional Retirement System
Danvers, Massachusetts

We have audited the accompanying schedule of employer allocations of the Essex Regional Retirement System (ERRS) as of and for the year ended December 31, 2016, and the related notes. We have also audited the total for all entities of the rows titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions and total pension expense included in the accompanying schedule of pension amounts by employer of the ERRS Pension Plan as of and for the year ended December 31, 2016, and the related notes.

Management's Responsibility for the Schedules

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

Auditor's Responsibility

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

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

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

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions and total pension expense for the total of all participating entities for the Essex Regional Retirement System as of and for the year ended December 31, 2016, in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the Essex Regional Retirement System as of and for the year ended December 31, 2016, and our report thereon, dated June 15, 2017, expressed an unmodified opinion on those financial statements.

Restriction on Use

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

Powers & Sullivan LLC

June 15, 2017

SCHEDULE OF EMPLOYER ALLOCATIONS

FOR THE YEAR ENDED DECEMBER 31, 2016

Employer	2017 Pension Fund Appropriation	Current Direct E.R.I. Appropriation	FY2017 Total Appropriation	Remaining Direct E.R.I. Liability	Allocated Net Pension Liability	Share of Net Pension Liability including E.R.I.	Percent of Total Net Pension Liability including E.R.I.
Retirement Board	$ 105,959	$ -	$ 105,959	$ -	$ 1,382,393	$ 1,382,393	0.359%
Town of Boxford	1,080,194	-	1,080,194	-	14,092,733	14,092,733	3.658%
Town of Essex	509,192	-	509,192	-	6,643,169	6,643,169	1.724%
Town of Georgetown	1,512,860	79,349	1,592,209	164,005	19,737,507	19,901,512	5.165%
Town of Groveland	632,811	7,495	640,306	70,770	8,255,961	8,326,731	2.161%
Town of Hamilton	809,409	-	809,409	-	10,559,951	10,559,951	2.741%
Town of Ipswich	3,049,266	-	3,049,266	-	39,782,214	39,782,214	10.325%
Town of Lynnfield	2,319,326	145,516	2,464,842	390,443	30,259,058	30,649,501	7.955%
Town of Manchester-by-the-Sea	1,015,441	-	1,015,441	-	13,247,938	13,247,938	3.438%
Town of Merrimac	721,110	45,935	767,045	91,300	9,407,956	9,499,256	2.465%
Town of Middleton	1,495,200	-	1,495,200	-	19,507,109	19,507,109	5.063%
Town of Nahant	629,868	-	629,868	-	8,217,561	8,217,561	2.133%
Town of Newbury	576,888	-	576,888	-	7,526,365	7,526,365	1.953%
Town of North Andover	4,453,223	-	4,453,223	-	58,098,928	58,098,928	15.079%
Town of Rockport	1,604,102	7,978	1,612,080	14,796	20,927,902	20,942,698	5.436%
Town of Rowley	841,786	-	841,786	-	10,982,349	10,982,349	2.850%
Town of Salisbury	1,089,023	102,456	1,191,479	190,020	14,207,933	14,397,953	3.737%
Town of Topsfield	1,041,931	-	1,041,931	-	13,593,536	13,593,536	3.528%
Town of Wenham	600,435	-	600,435	-	7,833,563	7,833,563	2.033%
Town of West Newbury	553,342	29,416	582,758	54,555	7,219,166	7,273,721	1.888%
East Essex Veterans District	26,490	-	26,490	-	345,598	345,598	0.090%
Byfield Water District	20,603	-	20,603	-	268,799	268,799	0.070%
Lynnfield Center Water District	70,639	-	70,639	-	921,596	921,596	0.239%
Lynnfield Water District	67,696	-	67,696	-	883,196	883,196	0.229%
NE Massachusetts Mosquito Control District	150,109	-	150,109	-	1,958,391	1,958,391	0.508%
Hamilton-Wenham Regional School	838,842	-	838,842	-	10,943,949	10,943,949	2.840%
Manchester-Essex Regional School	509,192	-	509,192	-	6,643,169	6,643,169	1.724%
Masconomet Regional School	515,079	-	515,079	-	6,719,969	6,719,969	1.744%
Pentucket Regional School	1,053,704	37,680	1,091,384	75,091	13,747,136	13,822,227	3.588%
Triton Regional School	997,781	30,710	1,028,491	56,957	13,017,539	13,074,496	3.393%
Essex Housing Authority	8,830	4,084	12,914	7,575	115,199	122,774	0.032%
Georgetown Housing Authority	47,093	-	47,093	-	614,397	614,397	0.159%
Groveland Housing Authority	26,490	-	26,490	-	345,598	345,598	0.090%
Hamilton Housing Authority	8,830	-	8,830	-	115,199	115,199	0.030%
Ipswich Housing Authority	103,016	27,045	130,061	50,158	1,343,994	1,394,152	0.362%
Lynnfield Housing Authority	20,603	-	20,603	-	268,799	268,799	0.070%
Manchester Housing Authority	23,546	-	23,546	-	307,199	307,199	0.080%
Middleton Housing Authority	14,717	-	14,717	-	191,999	191,999	0.050%
Nahant Housing Authority	11,773	8,069	19,842	76,205	153,599	229,804	0.060%
North Andover Housing Authority	129,505	13,573	143,078	36,417	1,689,592	1,726,009	0.448%
Rockport Housing Authority	61,809	-	61,809	-	806,396	806,396	0.209%
Rowley Housing Authority	11,773	-	11,773	-	153,599	153,599	0.040%
Salisbury Housing Authority	26,490	-	26,490	-	345,598	345,598	0.090%
Topsfield Housing Authority	23,546	-	23,546	-	307,199	307,199	0.080%
Wenham Housing Authority	23,546	6,114	29,660	11,340	307,199	318,539	0.083%
Total	$ 29,433,068	$ 545,420	$ 29,978,488	$ 1,289,632	$ 383,998,200	$ 385,287,832	100.000%

See notes to other supplementary information.

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	Retirement Board	Town of Boxford	Town of Essex	Town of Georgetown
Net Pension Liability				
Beginning net pension liability	$ 1,374,161	$ 13,307,669	$ 6,147,565	$ 18,092,138
Ending net pension liability	$ 1,382,393	$ 14,092,733	$ 6,643,169	$ 19,901,512
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	60,556	617,333	291,004	871,786
Changes of assumptions	58,587	597,264	281,544	843,445
Changes in proportion and differences between employer contributions and proportionate share of contributions	36,370	-	99,770	543,011
Total Deferred Outflows of Resources	$ 155,513	$ 1,214,597	$ 672,318	$ 2,258,242
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 24,895	$ 253,788	$ 119,633	$ 358,394
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	55,061	57,659	-	221,084
Total Deferred Inflows of Resources	$ 79,956	$ 311,447	$ 119,633	$ 579,478
Pension Expense				
Proportionate share of plan pension expense	$ 159,636	$ 1,627,393	$ 767,137	$ 2,298,177
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(1,744)	(16,226)	24,925	60,199
Total Employer Pension Expense	$ 157,892	$ 1,611,167	$ 792,062	$ 2,358,376
Contributions				
Statutory required contribution	$ 103,959	$ 1,059,806	$ 499,581	$ 1,562,156
Contribution in relation to statutory required contribution	(103,959)	(1,061,314)	(499,581)	(1,562,156)
Contribution deficiency/(excess)	$ -	$ (1,508)	$ -	$ -
Contributions as a percentage of covered payroll	18.59%	22.17%	22.06%	23.05%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2018	$ 25,345	$ 259,932	$ 155,103	$ 450,184
June 30, 2019	25,345	259,932	155,103	450,184
June 30, 2020	26,659	273,327	161,417	469,101
June 30, 2021	(775)	94,752	69,351	260,339
June 30, 2022	(1,017)	15,207	11,711	48,956
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 75,557	$ 903,150	$ 552,685	$ 1,678,764
Discount Rate Sensitivity				
1% decrease (6.75%)	$ 1,694,359	$ 17,273,047	$ 8,142,336	$ 24,355,685
Current discount rate (7.75%)	$ 1,382,393	$ 14,092,733	$ 6,643,169	$ 19,901,512
1% increase (8.75%)	$ 1,151,593	$ 11,739,854	$ 5,534,045	$ 16,606,198
Covered Payroll	$ 559,167	$ 4,787,031	$ 2,264,722	$ 6,776,013

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	Town of Groveland	Town of Hamilton	Town of Ipswich	Town of Lynnfield
Net Pension Liability				
Beginning net pension liability	$ 8,281,473	$ 9,546,806	$ 39,272,090	$ 29,141,294
Ending net pension liability	$ 8,326,731	$ 10,559,951	$ 39,782,214	$ 30,649,501
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	364,753	462,579	1,742,661	1,342,602
Changes of assumptions	352,895	447,541	1,686,009	1,298,956
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	305,850	-	-
Total Deferred Outflows of Resources	$ 717,648	$ 1,215,970	$ 3,428,670	$ 2,641,558
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 149,951	$ 190,168	$ 716,414	$ 551,949
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	519,403	285,880	1,539,825	302,688
Total Deferred Inflows of Resources	$ 669,354	$ 476,048	$ 2,256,239	$ 854,637
Pension Expense				
Proportionate share of plan pension expense	$ 961,550	$ 1,219,437	$ 4,593,950	$ 3,539,328
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(137,279)	(16,516)	(379,933)	(84,930)
Total Employer Pension Expense	$ 824,271	$ 1,202,921	$ 4,214,017	$ 3,454,398
Contributions				
Statutory required contribution	$ 628,220	$ 794,132	$ 2,991,712	$ 2,418,319
Contribution in relation to statutory required contribution	(628,220)	(794,132)	(3,009,923)	(2,427,649)
Contribution deficiency/(excess)	$ -	$ -	$ (18,211)	$ (9,330)
Contributions as a percentage of covered payroll	22.61%	22.52%	22.07%	22.49%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2017	$ 25,890	$ 190,414	$ 399,629	$ 515,670
June 30, 2018	25,890	190,414	399,629	515,670
June 30, 2019	33,804	200,452	437,443	544,803
June 30, 2020	(30,931)	131,820	(45,632)	181,389
June 30, 2021	(6,359)	26,822	(18,638)	29,389
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 48,294	$ 739,922	$ 1,172,431	$ 1,786,921
Discount Rate Sensitivity				
1% decrease (6.75%)	$ 10,189,857	$ 12,943,019	$ 48,759,880	$ 37,478,076
Current discount rate (7.75%)	$ 8,326,731	$ 10,559,951	$ 39,782,214	$ 30,649,501
1% increase (8.75%)	$ 6,948,341	$ 8,796,893	$ 33,140,296	$ 25,597,541
Covered Payroll	$ 2,778,252	$ 3,526,675	$ 13,639,196	$ 10,794,272

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	Town of Manchester-by-the-Sea	Town of Merrimac	Town of Middleton	Town of Nahant
Net Pension Liability				
Beginning net pension liability	$ 12,475,940	$ 8,843,732	$ 17,900,262	$ 8,751,239
Ending net pension liability	$ 13,247,938	$ 9,499,256	$ 19,507,109	$ 8,217,561
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	580,326	416,115	854,509	359,971
Changes of assumptions	561,460	402,588	826,730	348,268
Changes in proportion and differences between employer contributions and proportionate share of contributions	427,830	104,828	363,838	26,712
Total Deferred Outflows of Resources	$ 1,569,616	$ 923,531	$ 2,045,077	$ 734,951
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 238,574	$ 171,066	$ 351,292	$ 147,985
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	30,516	30,510	772,701
Total Deferred Inflows of Resources	$ 238,574	$ 201,582	$ 381,802	$ 920,686
Pension Expense				
Proportionate share of plan pension expense	$ 1,529,839	$ 1,096,950	$ 2,252,633	$ 948,944
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	133,533	15,423	77,093	(175,630)
Total Employer Pension Expense	$ 1,663,372	$ 1,112,373	$ 2,329,726	$ 773,314
Contributions				
Statutory required contribution	$ 996,275	$ 752,567	$ 1,466,978	$ 617,979
Contribution in relation to statutory required contribution	(996,275)	(752,567)	(1,468,481)	(617,979)
Contribution deficiency/(excess)	$ -	$ -	$ (1,503)	$ -
Contributions as a percentage of covered payroll	21.80%	24.54%	20.80%	18.85%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2017	$ 393,136	$ 201,568	$ 459,349	$ (14,601)
June 30, 2018	393,136	201,568	459,349	(14,601)
June 30, 2019	405,729	210,597	477,891	(6,790)
June 30, 2020	123,559	92,198	226,720	(122,488)
June 30, 2021	15,482	16,018	39,966	(27,255)
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 1,331,042	$ 721,949	$ 1,663,275	$ (185,735)
Discount Rate Sensitivity				
1% decrease (6.75%)	$ 16,237,606	$ 11,622,354	$ 23,909,286	$ 10,072,022
Current discount rate (7.75%)	$ 13,247,938	$ 9,499,256	$ 19,507,109	$ 8,217,561
1% increase (8.75%)	$ 11,036,102	$ 7,928,532	$ 16,250,261	$ 6,845,582
Covered Payroll	$ 4,569,174	$ 3,066,691	$ 7,060,090	$ 3,278,389

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	Town of Newbury	Town of North Andover	Town of Rockport	Town of Rowley
Net Pension Liability				
Beginning net pension liability	$ 7,160,105	$ 53,845,435	$ 19,295,790	$ 10,053,076
Ending net pension liability	$ 7,526,365	$ 58,098,928	$ 20,942,698	$ 10,982,349
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	329,693	2,545,025	917,396	481,082
Changes of assumptions	318,975	2,462,289	887,572	465,443
Changes in proportion and differences between employer contributions and proportionate share of contributions	95,422	789,373	380,674	369,335
Total Deferred Outflows of Resources	$ 744,090	$ 5,796,687	$ 2,185,642	$ 1,315,860
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 135,538	$ 1,046,269	$ 377,145	$ 197,775
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	54,042	-	-	-
Total Deferred Inflows of Resources	$ 189,580	$ 1,046,269	$ 377,145	$ 197,775
Pension Expense				
Proportionate share of plan pension expense	$ 869,125	$ 6,709,119	$ 2,418,411	$ 1,268,214
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	16,952	196,499	94,107	98,826
Total Employer Pension Expense	$ 886,077	$ 6,905,618	$ 2,512,518	$ 1,367,040
Contributions				
Statutory required contribution	$ 565,999	$ 4,369,169	$ 1,581,652	$ 825,898
Contribution in relation to statutory required contribution	(565,999)	(4,370,760)	(1,581,652)	(825,898)
Contribution deficiency/(excess)	$ -	$ (1,591)	$ -	$ -
Contributions as a percentage of covered payroll	22.20%	21.63%	21.92%	22.71%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2017	$ 164,437	$ 1,334,991	$ 504,495	$ 314,033
June 30, 2018	164,437	1,334,991	504,495	314,033
June 30, 2019	171,591	1,390,215	524,401	324,472
June 30, 2020	47,884	590,676	234,894	142,183
June 30, 2021	6,161	99,545	40,212	23,364
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 554,510	$ 4,750,418	$ 1,808,497	$ 1,118,085
Discount Rate Sensitivity				
1% decrease (6.75%)	$ 9,224,843	$ 71,210,138	$ 25,665,507	$ 13,460,740
Current discount rate (7.75%)	$ 7,526,365	$ 58,098,928	$ 20,942,698	$ 10,982,349
1% increase (8.75%)	$ 6,269,786	$ 48,398,907	$ 17,448,639	$ 9,148,769
Covered Payroll	$ 2,549,341	$ 20,203,810	$ 7,214,969	$ 3,636,114

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	Town of Salisbury	Town of Topsfield	Town of Wenham	Town of West Newbury
Net Pension Liability				
Beginning net pension liability	$ 12,894,986	$ 12,512,102	$ 7,449,402	$ 6,732,617
Ending net pension liability	$ 14,397,953	$ 13,593,536	$ 7,833,563	$ 7,273,721
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	630,703	595,465	343,149	318,626
Changes of assumptions	610,199	576,107	331,994	308,267
Changes in proportion and differences between employer contributions and proportionate share of contributions	574,635	298,593	94,603	107,429
Total Deferred Outflows of Resources	$ 1,815,537	$ 1,470,165	$ 769,746	$ 734,322
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 259,284	$ 244,798	$ 141,070	$ 130,988
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	436,691	-	53,991	183,623
Total Deferred Inflows of Resources	$ 695,975	$ 244,798	$ 195,061	$ 314,611
Pension Expense				
Proportionate share of plan pension expense	$ 1,662,640	$ 1,569,748	$ 904,601	$ 839,951
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	352	76,536	16,708	(31,804)
Total Employer Pension Expense	$ 1,662,992	$ 1,646,284	$ 921,309	$ 808,147
Contributions				
Statutory required contribution	$ 1,168,990	$ 1,022,265	$ 589,102	$ 571,759
Contribution in relation to statutory required contribution	(1,177,505)	(1,024,777)	(589,102)	(571,759)
Contribution deficiency/(excess)	$ (8,515)	$ (2,512)	$ -	$ -
Contributions as a percentage of covered payroll	24.11%	23.26%	21.49%	25.93%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2017	$ 282,491	$ 342,911	$ 170,213	$ 110,730
June 30, 2018	282,491	342,911	170,213	110,730
June 30, 2019	296,176	355,832	177,658	117,644
June 30, 2020	214,331	157,202	50,081	67,048
June 30, 2021	44,073	26,511	6,520	13,559
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 1,119,562	$ 1,225,367	$ 574,685	$ 419,711
Discount Rate Sensitivity				
1% decrease (6.75%)	$ 17,604,264	$ 16,661,195	$ 9,601,367	$ 8,902,873
Current discount rate (7.75%)	$ 14,397,953	$ 13,593,536	$ 7,833,563	$ 7,273,721
1% increase (8.75%)	$ 12,025,840	$ 11,324,001	$ 6,525,695	$ 6,068,431
Covered Payroll	$ 4,884,877	$ 4,405,007	$ 2,740,673	$ 2,205,364

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	East Essex Veterans District	Byfield Water District	Lynnfield Center Water District	Lynnfield Water District
Net Pension Liability				
Beginning net pension liability	$ 253,135	$ 397,784	$ 1,229,513	$ 795,567
Ending net pension liability	$ 345,598	$ 268,799	$ 921,596	$ 883,196
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	15,139	11,775	40,371	38,688
Changes of assumptions	14,647	11,392	39,058	37,431
Changes in proportion and differences between employer contributions and proportionate share of contributions	55,347	-	35,760	65,798
Total Deferred Outflows of Resources	$ 85,133	$ 23,167	$ 115,189	$ 141,917
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 6,224	$ 4,841	$ 16,596	$ 15,905
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	62,122	112,934	276,299	-
Total Deferred Inflows of Resources	$ 68,346	$ 117,775	$ 292,895	$ 15,905
Pension Expense				
Proportionate share of plan pension expense	$ 39,909	$ 31,040	$ 106,423	$ 101,990
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(6,235)	(27,068)	(54,610)	18,494
Total Employer Pension Expense	$ 33,674	$ 3,972	$ 51,813	$ 120,484
Contributions				
Statutory required contribution	$ 25,990	$ 20,214	$ 69,306	$ 66,418
Contribution in relation to statutory required contribution	(25,990)	(20,214)	(69,306)	(66,418)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	14.22%	22.86%	21.17%	24.28%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2017	$ 537	$ (21,801)	$ (36,551)	$ 35,801
June 30, 2018	537	(21,801)	(36,551)	35,801
June 30, 2019	866	(21,545)	(35,675)	36,640
June 30, 2020	11,811	(24,509)	(56,841)	15,422
June 30, 2021	3,036	(4,952)	(12,088)	2,348
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 16,787	$ (94,608)	$ (177,706)	$ 126,012
Discount Rate Sensitivity				
1% decrease (6.75%)	$ 423,590	$ 329,459	$ 1,129,573	$ 1,082,507
Current discount rate (7.75%)	$ 345,598	$ 268,799	$ 921,596	$ 883,196
1% increase (8.75%)	$ 287,898	$ 223,921	$ 767,729	$ 735,740
Covered Payroll	$ 182,728	$ 88,439	$ 327,435	$ 273,584

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	NE MA Mosquito Control District	Hamilton-Wenham Regional School	Manchester-Essex Regional School	Masconomet Regional School
Net Pension Liability				
Beginning net pension liability	$ 1,988,918	$ 10,306,211	$ 6,545,348	$ 6,617,673
Ending net pension liability	$ 1,958,391	$ 10,943,949	$ 6,643,169	$ 6,719,969
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	85,787	479,400	291,004	294,368
Changes of assumptions	82,999	463,815	281,544	284,799
Changes in proportion and differences between employer contributions and proportionate share of contributions	32,847	147,195	15,371	-
Total Deferred Outflows of Resources	$ 201,633	$ 1,090,410	$ 587,919	$ 579,167
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 35,267	$ 197,083	$ 119,633	$ 121,016
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	110,256	-	220,059	267,559
Total Deferred Inflows of Resources	$ 145,523	$ 197,083	$ 339,692	$ 388,575
Pension Expense				
Proportionate share of plan pension expense	$ 226,150	$ 1,263,780	$ 767,137	$ 776,005
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(15,986)	45,863	(47,591)	(67,240)
Total Employer Pension Expense	$ 210,164	$ 1,309,643	$ 719,546	$ 708,765
Contributions				
Statutory required contribution	$ 147,276	$ 823,009	$ 499,581	$ 505,357
Contribution in relation to statutory required contribution	(147,276)	(823,009)	(499,581)	(505,357)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	19.63%	20.72%	22.69%	19.90%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2017	$ 22,390	$ 260,318	$ 82,587	$ 64,443
June 30, 2018	22,390	260,318	82,587	64,443
June 30, 2019	24,252	270,720	88,901	70,830
June 30, 2020	(9,943)	89,182	(3,079)	(6,445)
June 30, 2021	(2,979)	12,789	(2,769)	(2,679)
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 56,110	$ 893,327	$ 248,227	$ 190,592
Discount Rate Sensitivity				
1% decrease (6.75%)	$ 2,400,342	$ 13,413,674	$ 8,142,336	$ 8,236,467
Current discount rate (7.75%)	$ 1,958,391	$ 10,943,949	$ 6,643,169	$ 6,719,969
1% increase (8.75%)	$ 1,631,424	$ 9,116,780	$ 5,534,045	$ 5,598,023
Covered Payroll	$ 750,146	$ 3,971,144	$ 2,202,134	$ 2,538,981

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	Pentucket Regional School	Triton Regional School	Essex Housing Authority	Georgetown Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 13,268,746	$ 12,088,079	$ 119,424	$ 542,432
Ending net pension liability	$ 13,822,227	$ 13,074,496	$ 122,774	$ 614,397
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	605,483	572,729	5,378	26,914
Changes of assumptions	585,799	554,110	5,203	26,039
Changes in proportion and differences between employer contributions and proportionate share of contributions	282,894	560,829	50,595	28,465
Total Deferred Outflows of Resources	$ 1,474,176	$ 1,687,668	$ 61,176	$ 81,418
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 248,916	$ 235,451	$ 2,211	$ 11,064
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	169,612	-	-	1,790
Total Deferred Inflows of Resources	$ 418,528	$ 235,451	$ 2,211	$ 12,854
Pension Expense				
Proportionate share of plan pension expense	$ 1,596,156	$ 1,509,810	$ 14,178	$ 70,949
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	48,021	161,038	15,855	6,218
Total Employer Pension Expense	$ 1,644,177	$ 1,670,848	$ 30,033	$ 77,167
Contributions				
Statutory required contribution	$ 1,070,784	$ 1,009,079	$ 12,670	$ 47,093
Contribution in relation to statutory required contribution	(1,070,784)	(1,009,079)	(12,670)	(47,093)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	22.31%	21.53%	36.64%	20.73%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2017	$ 318,878	$ 417,243	$ 18,261	$ 18,258
June 30, 2018	318,878	417,243	18,261	18,258
June 30, 2019	332,016	429,670	18,378	18,842
June 30, 2020	77,910	163,786	3,953	11,136
June 30, 2021	7,966	24,275	112	2,070
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 1,055,648	$ 1,452,217	$ 58,965	$ 68,564
Discount Rate Sensitivity				
1% decrease (6.75%)	$ 16,924,549	$ 16,012,169	$ 148,771	$ 753,048
Current discount rate (7.75%)	$ 13,822,227	$ 13,074,496	$ 122,774	$ 614,397
1% increase (8.75%)	$ 11,527,046	$ 10,901,127	$ 103,541	$ 511,819
Covered Payroll	$ 4,798,816	$ 4,686,440	$ 34,582	$ 227,198

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	Groveland Housing Authority	Hamilton Housing Authority	Ipswich Housing Authority	Lynnfield Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 361,621	$ 144,649	$ 1,301,945	$ 253,135
Ending net pension liability	$ 345,598	$ 115,199	$ 1,394,152	$ 268,799
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	15,139	5,046	61,071	11,775
Changes of assumptions	14,647	4,882	59,086	11,392
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	-	25,853	44
Total Deferred Outflows of Resources	$ 29,786	$ 9,928	$ 146,010	$ 23,211
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 6,224	$ 2,075	$ 25,106	$ 4,841
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	28,102	28,921	74,065	971
Total Deferred Inflows of Resources	$ 34,326	$ 30,996	$ 99,171	$ 5,812
Pension Expense				
Proportionate share of plan pension expense	$ 39,909	$ 13,304	$ 160,992	$ 31,040
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(6,728)	(6,992)	(16,990)	(292)
Total Employer Pension Expense	$ 33,181	$ 6,312	$ 144,002	$ 30,748
Contributions				
Statutory required contribution	$ 25,990	$ 8,830	$ 130,061	$ 20,214
Contribution in relation to statutory required contribution	(25,990)	(8,830)	(130,061)	(20,214)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	32.20%	14.85%	26.11%	22.60%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2017	$ 44	$ (4,735)	$ 10,329	$ 4,975
June 30, 2018	44	(4,735)	10,329	4,975
June 30, 2019	373	(4,625)	11,655	5,231
June 30, 2020	(4,086)	(5,798)	11,673	1,906
June 30, 2021	(915)	(1,175)	2,853	312
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ (4,540)	$ (21,068)	$ 46,839	$ 17,399
Discount Rate Sensitivity				
1% decrease (6.75%)	$ 423,590	$ 141,197	$ 1,697,452	$ 329,459
Current discount rate (7.75%)	$ 345,598	$ 115,199	$ 1,394,152	$ 268,799
1% increase (8.75%)	$ 287,898	$ 95,966	$ 1,169,763	$ 223,921
Covered Payroll	$ 80,712	$ 59,458	$ 498,093	$ 89,454

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	Manchester Housing Authority	Middleton Housing Authority	Nahant Housing Authority	North Andover Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 289,297	$ 216,973	$ 222,884	$ 1,674,016
Ending net pension liability	$ 307,199	$ 191,999	$ 229,804	$ 1,726,009
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	13,457	8,411	10,067	75,608
Changes of assumptions	13,019	8,137	9,739	73,150
Changes in proportion and differences between employer contributions and proportionate share of contributions	51	-	-	-
Total Deferred Outflows of Resources	$ 26,527	$ 16,548	$ 19,806	$ 148,758
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 5,532	$ 3,458	$ 4,138	$ 31,083
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	818	69,503	35,415	75,685
Total Deferred Inflows of Resources	$ 6,350	$ 72,961	$ 39,553	$ 106,768
Pension Expense				
Proportionate share of plan pension expense	$ 35,475	$ 22,171	$ 26,536	$ 199,315
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(244)	(19,665)	(10,582)	(21,558)
Total Employer Pension Expense	$ 35,231	$ 2,506	$ 15,954	$ 177,757
Contributions				
Statutory required contribution	$ 23,102	$ 14,439	$ 19,468	$ 143,078
Contribution in relation to statutory required contribution	(23,102)	(14,439)	(19,468)	(143,078)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	21.80%	16.08%	43.51%	24.74%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2017	$ 5,776	$ (15,903)	$ (6,079)	$ 12,264
June 30, 2018	5,776	(15,903)	(6,079)	12,264
June 30, 2019	6,068	(15,720)	(5,860)	13,905
June 30, 2020	2,198	(7,793)	(1,684)	2,892
June 30, 2021	359	(1,094)	(45)	665
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 20,177	$ (56,413)	$ (19,747)	$ 41,990
Discount Rate Sensitivity				
1% decrease (6.75%)	$ 376,524	$ 235,328	$ 264,467	$ 2,107,300
Current discount rate (7.75%)	$ 307,199	$ 191,999	$ 229,804	$ 1,726,009
1% increase (8.75%)	$ 255,910	$ 159,944	$ 204,160	$ 1,443,920
Covered Payroll	$ 105,979	$ 89,806	$ 44,740	$ 578,238

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	Rockport Housing Authority	Rowley Housing Authority	Salisbury Housing Authority	Topsfield Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 650,919	$ 144,649	$ 397,784	$ 180,811
Ending net pension liability	$ 806,396	$ 153,599	$ 345,598	$ 307,199
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	35,324	6,728	15,139	13,457
Changes of assumptions	34,176	6,510	14,647	13,019
Changes in proportion and differences between employer contributions and proportionate share of contributions	122,503	204	20,023	82,986
Total Deferred Outflows of Resources	$ 192,003	$ 13,442	$ 49,809	$ 109,462
Deferred Inflows of Resources				
Differences between expected and actual experience	$ 14,522	$ 2,766	$ 6,224	$ 5,532
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	1,429	54,829	1,275
Total Deferred Inflows of Resources	$ 14,522	$ 4,195	$ 61,053	$ 6,807
Pension Expense				
Proportionate share of plan pension expense	$ 93,121	$ 17,737	$ 39,909	$ 35,475
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	32,102	(397)	(6,798)	19,360
Total Employer Pension Expense	$ 125,223	$ 17,340	$ 33,111	$ 54,835
Contributions				
Statutory required contribution	$ 60,642	$ 11,773	$ 26,684	$ 23,102
Contribution in relation to statutory required contribution	(60,642)	(11,773)	(26,490)	(23,102)
Contribution deficiency/(excess)	$ -	$ -	$ 194	$ -
Contributions as a percentage of covered payroll	32.75%	23.42%	20.78%	39.66%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense				
June 30, 2017	$ 47,904	$ 2,613	$ (26)	$ 25,380
June 30, 2018	47,904	2,613	(26)	25,380
June 30, 2019	48,670	2,759	303	25,672
June 30, 2020	28,111	1,076	(9,287)	21,917
June 30, 2021	4,892	186	(2,208)	4,306
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 177,481	$ 9,247	$ (11,244)	$ 102,655
Discount Rate Sensitivity				
1% decrease (6.75%)	$ 988,376	$ 188,262	$ 423,590	$ 376,524
Current discount rate (7.75%)	$ 806,396	$ 153,599	$ 345,598	$ 307,199
1% increase (8.75%)	$ 671,763	$ 127,955	$ 287,898	$ 255,910
Covered Payroll	$ 185,169	$ 50,278	$ 127,477	$ 58,257

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2016

	Wenham Housing Authority	West Newbury Housing Authority	Totals
Net Pension Liability			
Beginning net pension liability	$ 269,510	$ -	$ 363,338,905
Ending net pension liability	$ 318,539	$ -	$ 385,287,832
Deferred Outflows of Resources			
Differences between expected and actual experience	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	13,954	-	16,877,546
Changes of assumptions	13,500	-	16,328,873
Changes in proportion and differences between employer contributions and proportionate share of contributions	27,242	-	6,172,280
Total Deferred Outflows of Resources	$ 54,696	$ -	$ 39,378,699
Deferred Inflows of Resources			
Differences between expected and actual experience	$ 5,736	$ -	$ 6,938,420
Changes of assumptions	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	16,583	20,383	6,172,284
Total Deferred Inflows of Resources	$ 22,319	$ 20,383	$ 13,110,704
Pension Expense			
Proportionate share of plan pension expense	$ 36,786	$ -	$ 44,492,080
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	1,304	(6,370)	-
Total Employer Pension Expense	$ 38,090	$ (6,370)	$ 44,492,080
Contributions			
Statutory required contribution	$ 29,660	$ -	$ 29,420,338
Contribution in relation to statutory required contribution	(29,660)	-	(29,463,314)
Contribution deficiency/(excess)	$ -	$ -	$ (42,976)
Contributions as a percentage of covered payroll	29.54%	N/A	22.14%
Deferred (Inflows)/Outflows Recognized in Future Pension Expense			
June 30, 2017	$ 7,547	$ (6,370)	$ 7,550,003
June 30, 2018	7,547	(6,370)	7,550,003
June 30, 2019	7,850	(6,370)	7,916,228
June 30, 2020	7,769	(1,273)	2,804,605
June 30, 2021	1,664	-	447,156
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 32,377	$ (20,383)	$ 26,267,995
Discount Rate Sensitivity			
1% decrease (6.75%)	$ 387,864	$ -	$ 471,944,872
Current discount rate (7.75%)	$ 318,539	$ -	$ 385,287,832
1% increase (8.75%)	$ 267,249	$ -	$ 321,176,656
Covered Payroll	$ 100,411	$ -	$ 133,089,526

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(concluded)

NOTE I – Schedule of Employer Allocations

Governmental Accounting Standards Board (GASB) Statement #68 requires employers participating in a cost-sharing pension plan to recognize pension liabilities as employees provide services to the government and earn their pension benefits. For the first time, employers participating in cost-sharing plans are required to recognize their proportionate share of the plan's collective pension amounts for all benefits provided through the plan including the net pension liability, deferred outflows of resources, deferred inflows of resources, contributions and pension expense.

GASB Statement #68 requires the allocation of the collective pension amounts be consistent with the manner in which contributions to the plan are determined. As permissible under GASB Statement #68, The Schedule of Employer Allocations is used to demonstrate the allocation of Essex Regional Retirement System's collective pension amounts.

Massachusetts General Law (MGL) Chapter 32 Section 22 Paragraph 7c dictates that Massachusetts cost sharing defined benefit pension plans allocate the annual required pension fund appropriation to employer units based on their proportionate share of the aggregate of the annual rates of regular compensation of all members in service of the system who are employees of any government unit at the close of business on the September 30th immediately preceding the fiscal year. Accordingly, the proportionate aggregate rates of regular compensation as of the close of business on September 30, 2015 were applied to allocate the System's fiscal year 2016 pension fund appropriation by member unit.

When a member unit accepts an Early Retirement Incentive Program (E.R.I. or ERIP), PERAC completes an analysis of the costs and liabilities attributable to the additional benefits payable in accordance with the ERIP. The accrued liability for the members who accept the ERIP as retirees including the ERIP less the accrued liability for the members as active employees excluding the ERIP represents the increase in accrued liability due to the ERIP. The net increase is amortized for each member unit accepting the ERIP, and is separately identified in the system's funding schedule. The 2002 ERIP amortization is straight line ending in fiscal 2019, except Nahant Housing which is increasing at 4.5% per year ending in 2028 and Essex Regional Retirement Board which was straight line and ended in fiscal 2012. The 2003 ERI amortization is straight line ending in fiscal 2020, except for Groveland which is increasing at 4.5% per year ending in 2028 and Essex Regional Retirement Board which was straight line and ended in fiscal 2012.

The allocation percentage of the total net pension liability is a blended rate of the following items. (1) The proportionate share of active employer's covered payroll is applied to the fiscal year 2016 pension fund appropriation calculated by the actuary. (2) Current Direct E.R.I. appropriation is a direct current charge calculated by PERAC for only the employers that accepted the ERIP. This direct charge backed out of the total pension fund appropriation to calculate the percentage to be allocated (3) Remaining Direct E.R.I. liability is the future E.R.I. liability associated directly to those employers that accepted the ERIP. This direct liability is added back to those employers once the non-ERIP liability has been allocated.

NOTE II – Schedule of Pension Amounts by Employer

The Schedule of Pension Amounts by Employer presents the net pension liability, the various categories of deferred outflows of resources and deferred inflows of resources, contributions and pension expense for all participating employers including differences between expected and actual economic experience; differences between projected and actual investment earnings, net; and changes of assumptions.

ESSEX REGIONAL RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2015

ESSEX REGIONAL RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2015

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Financial Section

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Independent Auditor's Report

To the Honorable Essex Retirement Board
Essex Regional Retirement System
Danvers, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of the Essex Regional Retirement System (ERRS) as of and for the year ended December 31, 2015, and the related notes to the financial statements, which collectively comprise the Essex Regional Retirement System's 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 an opinion 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 opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Essex Regional Retirement System as of December 31, 2015 and the results of its operations and changes in its financial position for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that Management's Discussion and Analysis; the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Return 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 Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated August 22, 2016, on our consideration of the Essex Regional Retirement System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, grant agreements and other matters. The purpose of that report is 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 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 Essex Regional Retirement System's internal control over financial reporting and compliance.

Restriction on Use

This report is intended solely for the information and use of Essex Regional Retirement System, the Public Employee Retirement Commission and all member units and is not intended to be and should not be used by anyone other than these specified parties.

Powers & Sullivan LLC

August 22, 2016

Management's Discussion and Analysis

As management of the Essex Regional Retirement System, we offer readers of these financial statements this narrative overview and analysis of the financial activities for the year ended December 31, 2015. The System complies with financial reporting requirements issued by the Governmental Accounting Standards Board (GASB).

The GASB is the authoritative standard setting body that provides guidance on how to prepare financial statements in conformity with generally accepted accounting principles (GAAP). Users of these financial statements rely on the GASB to establish consistent reporting standards for all governments in the United States. This consistent application is the only way users can assess the financial condition of a public retirement system compared to others.

Financial Highlights

- The System's assets exceeded its liabilities at the close of the most recent year by $378 million (net position).
- The System's net position increased by $6.9 million for the year ended December 31, 2015.
- Total investment income was $6.2 million; investment expenses were $2.1 million; and net investment income was $4.1 million.
- Total contributions were $48.2 million including $27.9 from employers, $12.5 from members and a one-time contribution from Essex Tech of $4.1 million.
- Retirement benefits, refunds and transfers amounted to $44.5 million.
- Administrative expenses were $949,000.
- The Total Pension Liability is $741.7 million as of December 31, 2015 while the Net Pension Liability is $363.3 million.
- The Plan fiduciary net position as a percentage of the total pension liability is 51.01%.

Overview of the Financial Statements

This discussion and analysis is intended to serve as an introduction to the System fiduciary financial statements. These fiduciary financial statements comprise of four components: 1) management's discussion and analysis, 2) fiduciary financial statements, 3) notes to the financial statements and 4) required supplementary information.

Fiduciary Financial Statements

The *statement of net position* presents information on all assets and deferred outflows less deferred inflows and liabilities with the difference reported as *net position*. Over time, increases or decreases in net position may serve as a useful indicator of whether the financial position is improving or deteriorating.

The *statement of changes in fiduciary net position* presents information showing how the system's net position changed during the most recent year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, *regardless of the timing of related cash flows*. Thus, additions and deductions are reported in this statement for some items that will only result in cash flows in future periods.

Notes to the financial statements

The notes provide additional information that is essential to a full understanding of the data provided in the fiduciary financial statements.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the Schedule of Changes in the Net Pension Liability and Related Ratios; the Schedule of Contributions; and the Schedule of Investment Return 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.

Financial Analysis

As noted earlier, net position may serve over time as a useful indicator of the System's financial position. The System's net position exceeded liabilities by $378 million at the close of 2015.

The assets accumulated are held to provide pension benefits for qualified retirees along with active and inactive employees of the member units. At year end the system's net position include investments of $372.5 million, cash of $995,000 accounts receivable of $5.5 million, and capital assets of $205,000.

In 2015 the System's contributions were $48.2 million and net investment income was $4.1 million while retirement benefit payments, refunds, transfers and administration expenses were $45.4 million which resulted in a current increase of $6.9 million. In 2014 the System's contributions were $42.2 million and net investment income was $29.3 million while retirement benefit payments, refunds, transfers and administration expenses were $45 million which resulted in a prior year increase of 26.5 million.

In 2015 the System recognized a contribution from Essex North Shore Agricultural and Technical School District (Essex Tech) as the successor agency to both the Essex Agricultural and Technical High School and the North Shore Vocational Regional School. Legislation requires Essex Tech to reimburse ERRS for the actuarially determined liability associated with the retired members from Essex Agricultural and Technical High School who remain with ERRS. Accordingly in 2015, PERAC approved a funding schedule for Essex Tech to pay ERRS in equal annual payments of $421,947 from 2017 through 2033. The $4,156,756 present value of these payments has been recorded as an intergovernmental receivable and contribution in 2015.

The main difference of the increase in net position between years was the combination of the one-time $4.1 million Essex Tech contribution along with the change in net investment income between years. Net investment income was $4.1 million and $39.2 million in 2015 and 2014 respectively. The annual money weighted rate of return was 1.04% and 8.48% in 2015 and 2014 respectively. Fluctuations in the system's annual investment returns are expected.

The following tables present summarized financial information for the past two years.

	2015	2014
Statement of Fiduciary Net Position		
Assets:		
Cash	$ 994,843	$ 794,947
Investments	372,507,562	369,752,995
Receivables	5,531,842	1,325,268
Capital assets, net of accumulated depreciation	205,425	219,799
Total assets	379,239,672	372,093,009
Liabilities:		
Accounts payable	900,910	621,553
Abandoned property	-	745
Total liabilities	900,910	622,298
Net Position Restricted for Pension Benefits	$ 378,338,762	$ 371,470,711

	2015	2014
Statement of Changes in Fiduciary Net Position		
Additions:		
Contributions:		
Member contributions	$ 15,676,204	$ 15,594,962
Employer contributions	27,966,800	26,140,616
Other contributions	390,749	439,509
Essex Agricultural and Technical High School	4,156,756	-
Total contributions	48,190,509	42,175,087
Net investment income (loss):		
Total investment income (loss)	6,246,628	31,533,042
Less, investment expenses	(2,142,796)	(2,210,181)
Net investment income (loss)	4,103,832	29,322,861
Total additions	52,294,341	71,497,948
Deductions:		
Administration	949,046	936,725
Retirement benefits, refunds and transfers	44,477,244	44,082,262
Total deductions	45,426,290	45,018,987
Net increase (decrease) in fiduciary net position	6,868,051	26,478,961
Fiduciary net position at beginning of year	371,470,711	344,991,750
Fiduciary net position at end of year	$ 378,338,762	$ 371,470,711

Requests for Information

This financial report is designed to provide a general overview of the System's finances for all 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 addressed to the System's Board, 491 Maple St #202, Danvers, MA 01923.

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STATEMENT OF FIDUCIARY NET POSITION

DECEMBER 31, 2015

Assets		
Cash	$	994,843
Investments:		
PRIT funds		350,223,248
Money market mutual funds		1,407,149
Pooled alternative investments		14,860,342
Pooled real estate funds		6,011,639
Fixed income investments		5,184
Total investments		372,507,562
Receivables:		
Members contributions		1,374,837
Essex Agricultural and Technical High School		4,156,756
Other		249
Total receivables		5,531,842
Capital assets, net of accumulated depreciation		205,425
Total assets		379,239,672
Liabilities		
Accounts payable		900,910
Net Position Restricted for Pensions	$	378,338,762

See notes to financial statements.

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION

FOR THE YEAR ENDED DECEMBER 31, 2015

Additions:	
Contributions:	
Member contributions	$ 12,491,708
Retirement benefits - transfers from other systems	1,731,912
Retirement benefits - 3(8)c contributions from other systems	1,452,584
Employer contributions	27,893,676
Employer contributions - federal grant reimbursements	73,124
Retirement benefits - state COLA reimbursements	361,853
Retirement benefits - worker's compensation benefits	28,896
Essex Agricultural and Technical High School	4,156,756
Total contributions	48,190,509
Net investment income (loss):	
Total investment income (loss)	6,246,628
Less, investment expenses	(2,142,796)
Net investment income (loss)	4,103,832
Total additions	52,294,341
Deductions:	
Administration	949,046
Retirement benefits - transfers to other systems	1,948,912
Retirement benefits - 3(8)c contributions to other systems	2,534,324
Retirement benefits and refunds	39,994,008
Total deductions	45,426,290
Net increase (decrease) in fiduciary net position	6,868,051
Fiduciary net position at beginning of year	371,470,711
Fiduciary net position at end of year	$ 378,338,762

See notes to financial statements.

NOTE 1 – PLAN DESCRIPTION

Essex Regional Retirement System is a multiple-employer, cost-sharing, contributory defined benefit pension plan covering all employees of governmental member units deemed eligible by the Essex Regional Retirement Board (the Board), with the exception of school department employees who serve in a teaching capacity. The pensions of such school employees are administered by the Commonwealth of Massachusetts' Teachers Retirement System. Membership in the Plan is mandatory immediately upon the commencement of employment for all non-teaching permanent, full time employees. The Plan is administered by the Essex Regional Retirement System (the System).

Originally instituted in 1937, as part of Essex County government, the Board served as the regional retirement system for Essex County upon the abolition of county government in 1996 and the current system structure was created by special legislation in July, 2010 (Chapter 34B, Section 19A of the Massachusetts General Laws). The System is governed by a five member Board who establish the policies under which the System operates. Board members also approve all of the System's financial transactions, including the approval of retirement benefits to members. Board members are appointed or elected as specified by MGL Ch. 34B, Section 19A for terms ranging from 3 to 5 years.

The day-to-day operations of the System are managed by the Executive Director. The legislative body for the System is an Advisory Council consisting of full-time treasurers or other qualified officials of the member units. The Advisory Council meets twice annually and is responsible for supervising and certifying the procedures involved in the election of members to the retirement board.

As of January 1, 2014, the System had 1,729 retirees and beneficiaries, 2,677 active participants and 1,110 inactive participants with a vested right to retirement benefits or to receive a refund of their contributions.

The System is a member of the Massachusetts Contributory Retirement System and is governed by Chapter 32 of the Massachusetts General Laws. The Public Employee Retirement Administration Commission (PERAC) is the state agency responsible for oversight of the Commonwealth's public retirement systems.

Massachusetts Contributory Retirement System benefits are, with certain exceptions, uniform from system to system. The System provides for retirement allowance benefits up to a maximum of 80% of a member's highest three-year average annual rate of regular compensation. For persons who became members on or after April 2, 2012, average salary is the average annual rate of regular compensation received during the five consecutive years that produce the highest average, or, if greater, during the last five years (whether or not consecutive) preceding retirement. Benefit payments are based upon a member's age, length of creditable service, level of compensation, and group classification.

There are three classes of membership in the retirement system: group 1, group 2, and group 4. Group 1 consists of general employees which includes clerical and administrative positions. Group 2 consists of positions that have been specified as hazardous. Lastly, group 4 consists of police officers, firefighters, and other hazardous positions.

Members become vested after ten years of creditable service. A superannuation retirement allowance may be received upon the completion of 20 years of service or upon reaching the age of 55 with 10 years of service if hired after 1978 and if classified in groups 1 or 2. A person who became a member on or after April 2, 2012 is eligible for a superannuation retirement allowance upon reaching the age of 60 with 10 years of service if in group 1, 50 years of age with 10 years of service if in group 2, and 55 years of age if hired prior to 1978 or if classified in group 4. Normal retirement for most employees occurs at age 65 (except for certain hazardous duty and public safety positions, whose normal retirement is at age 55).

A retirement allowance consists of two parts: an annuity and a pension. A member's accumulated total deductions and the interest they generate constitute the annuity. The differential between the total retirement benefit and the annuity is the pension.

Active members contribute between 5% and 11% of their gross regular compensation. The percentage rate is keyed to the date upon which an employee's membership commences. These deductions are deposited in the Annuity Savings Fund and earn interest at a rate determined by the Public Employee Retirement Administration Commission's (PERAC) actuary. When a member's retirement becomes effective, his/her deductions and related interest are transferred to the Annuity Reserve Fund. Any cost-of-living adjustments granted between 1981 and 1997 and any increase in other benefits imposed by the Commonwealth of Massachusetts' state law during those years are borne by the Commonwealth and are deposited into the Pension Fund. Cost-of-living adjustments granted after 1997 must be approved by the System and all costs are borne by the System.

The pension portion of any retirement benefit is paid from the Pension Fund of the System. The governmental unit employing the member must annually appropriate and contribute the amount of current-year pension assessment. In past years, retirement systems were paying only the actual retirement benefits that were due each year. Systems had no statutory authorization to put aside money for the future benefits of employees who are currently employed. Large unfunded liabilities resulted from operating under this pay-as-you-go basis. In 1977, legislation authorized local governments to appropriate funds to meet future pension obligations. In 1983, additional legislation was passed requiring the transfer of investment earnings (in excess of the amount credited to member accounts) into the Pension Reserve Fund. These initiatives have significantly reduced the rate of growth of the Retirement System's unfunded liabilities, and in some Systems have actually reduced such liability.

Administrative expenses, which were previously appropriated from the governmental entities whose employees are members of the system, are now paid from investment income.

Members who become permanently and totally disabled for further duty may be eligible to receive a disability retirement allowance. The amount of benefits to be received in such cases is dependent on several factors, including whether or not the disability is work related, the member's age, years of creditable service, level of compensation, veterans' status and group classification.

Employees who resign from service and who are not eligible to receive a retirement allowance or are under the age of 55 are entitled to request a refund of their accumulated total deductions.

Survivor benefits are extended to eligible beneficiaries of members whose death occurs prior to or following retirement.

NOTE 2 – SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

The accompanying financial statements of the Essex Regional Retirement System have been prepared in accordance with accounting principles generally accepted in the United States of America (GAAP). The Governmental Accounting Standards Board (GASB) is the recognized standard-setting body for establishing governmental accounting and financial reporting principles.

ERRS is a special-purpose government engaged only in fiduciary activities. Accordingly, the financial statements are reported using the flow of economic resources measurement focus and use the accrual basis of accounting. Under this method, additions are recorded when earned and deductions are recorded when the liabilities are incurred.

Cash and Investments

Cash and cash equivalents are considered to be cash on hand, demand deposits and short-term investments with an original maturity of three months or less from the date of acquisition. Investments are carried at fair value. The fair values were determined by the closing price for those securities traded on national stock exchanges and at the average bid-and-asked quotation for those securities traded in the over-the-counter market. The fair value of private equities are based on management's valuation of estimates and assumptions from information and representations provided by the respective general partners, in the absence of readily ascertainable market values. Real estate assets are reported at fair value utilizing an income approach to valuation along with independent appraisals and estimates by management.

Accounts Receivable

Accounts receivable consist of member deductions, future appropriations from Essex Technical High School for the unfunded actuarial liability for retirees from Essex Agricultural and Technical School, pension fund appropriations, and federal grant reimbursements. These receivables are considered 100% collectible and therefore do not report an allowance for uncollectibles.

Deferred Outflows/Inflows of Resources

In addition to assets, the statement of fiduciary net position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, *deferred outflows of resources*, represents a consumption of fiduciary net position that applies to a future period(s) and so will not be recognized as an outflow of resources (deduction) until then. The ERRS did not have any items that qualify for reporting in this category.

In addition to liabilities, the statement of fiduciary net position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, *deferred inflows of resources,* represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (addition) until that time. The ERRS did not have any items that qualify for reporting in this category.

NOTE 3 – PLAN ADMINISTRATION

The System is administered by a five-person Board of Retirement. The first member shall be a chief executive or chief administrative officer of a member town, unit or district belonging to the Essex regional retirement system for a term of 3 years. This member shall be chosen by weighted vote of the chief executive or chief administrative officers of member towns, units or districts belonging to the Essex regional retirement system. The second member shall be a member of the regional retirement board advisory council, and shall be elected by a majority of those present and voting at a public meeting of the council and shall serve for a term of 3 years. The third and fourth members shall be elected by the members in or retired from service of the Essex county retirement system from among persons retired under the system and shall serve for a term of 3 years. The fifth member, who shall not be an employee, retiree or official of the retirement system, or of any of its constituent governmental units, shall be chosen by the other 4 members and shall serve for a term of 5 years.

First Member	Alan J. Benson	Term Expires:	12/1/2017
Second Member	Kevin A. Merz	Term Expires:	12/1/2018
Third Member	Susan J. Yaskell	Term Expires:	12/1/2016
Fourth Member	H. Joseph Maney	Term Expires:	12/1/2016
Fifth Member	Vincent R. Malgeri	Term Expires:	12/12/2020

Board members are required to meet at least once a month. The Board must keep a record of all of its proceedings. The Board must annually submit to the appropriate authority an estimate of the expenses of administration and cost of operation of the System. The Board must annually file a financial statement of condition for the System with PERAC.

The ERRS Advisory Council consists of the full time treasurers, elected or appointed, for each town, unit or district within the System. The members of the Advisory Council elect the second member of the Board of Retirement as well as a Chair from among its members. The ERRS Advisory Council is required by statute to meet twice per year, typically in the spring and fall. All ERRS Advisory Council meetings are open, public meetings and are subject to the Commonwealth's Open Meeting Law.

The investment of the System's funds is the responsibility of the Board. Disability retirement allowances must be approved by the Retirement Board and are then submitted to the PERAC Actuary for verification prior to payment. Superannuation retirement allowances are not required to obtain PERAC's verification. All expenses incurred by the System must be approved by a majority vote of the Board. Payments shall be made only upon vouchers signed by two persons designated by the Board.

ERRS board members and employees are bonded by an authorized agent representing a company licensed to do business in Massachusetts. The MACRS program for ERRS provides $50,000,000 fiduciary protection for Trustees and employees, as well as a $1,000,000 fidelity policy for crime coverage.

NOTE 4 – CASH AND INVESTMENTS

Custodial Credit Risk - Deposits

At December 31, 2014, the carrying amount of the System's deposits totaled $994,843 and the bank balance totaled $1,393,401 which was covered by Federal Depository Insurance.

Investments

The System's investments are as follows:

Investment Type	Fair Value	Maturity Over 10 Years
Debt Securities:		
Fixed Income………………………	$ 5,184	$ 5,184
Other Investments:		
PRIT Pooled Funds……………….	350,223,248	
Money Market Mutual Funds.........	1,407,149	
Pooled Alternative Investments.....	14,860,342	
Pooled Real Estate Funds……….	6,011,639	
Total Investments......................	$ 372,507,562	

Approximately 94% of the Retirement System's investments are in Pension Reserve Investment Trust (PRIT) Pooled Funds. This investment pool was established by the Treasurer of the Commonwealth of Massachusetts, who serves as Trustee. PRIT is administered by the Pension Reserves Investment Management Board. The fair values of the positions in each investment Pool are the same as the value of each Pool's shares. The Administration does not have the ability to control any of the investment decisions relative to its funds in PRIT.

Approximately 6% of the System's funds are invested in pooled alternative investments and pooled real estate funds. The market values of assets in those funds are based on the quoted values obtained from each pool.

The Administration's annual money-weighted rate of return on pension plan investments was 1.04%. The money–weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested, measured monthly.

NOTE 5 – RECEIVABLES

At December 31, 2014, receivables for the System are as follows:

	Gross Amount	Allowance for Uncollectibles	Net Amount
Receivables:			
Member contributions………………..………….	$ 1,374,837	$ -	$ 1,374,837
Essex Agricultural and Technical High School…..	4,156,756	-	4,156,756
Other………………………………………………	249	-	249
Total…………………………………………………	$ 5,531,842	$ -	$ 5,531,842

As more fully described in Note 9, the intergovernmental receivable consists of the present value of a stream of future payments to be received from Essex Technical High School (Essex Tech), as the successor agency of Essex Agricultural and Technical School from fiscal year 2017 through fiscal year 2033 for the unfunded actuarial liability for its retirees in the Essex Regional Retirement System.

NOTE 6 – CAPITAL ASSETS

Capital assets are depreciated on a straight-line basis. The estimated useful lives of capital assets are 33 years for buildings and 5 to 20 years for equipment.

The majority of capital assets owned by the System consist of two condominiums in Danvers, Massachusetts that were purchased for the administrative offices of the System. Both units were purchased in fiscal year 2000 for a total of $375,250. Total capital asset activity for the year ended December 31, 2015, was as follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets being depreciated:				
Buildings……	$ 375,250	$ -	$ -	$ 375,250
Equipment……	15,580	-	-	15,580
Total capital assets being depreciated……	390,830	-	-	390,830
Less accumulated depreciation for:				
Buildings……	(163,241)	(11,258)	-	(174,499)
Equipment……	(7,790)	(3,116)	-	(10,906)
Total accumulated depreciation……	(171,031)	(14,374)	-	(185,405)
Total capital assets being depreciated, net……	219,799	(14,374)	-	205,425
Total governmental activities capital assets, net……	$ 219,799	$ (14,374)	$ -	$ 205,425

NOTE 7 – MEMBERSHIP

The following table represents the System's membership at January 1, 2014:

Active members……	2,677
Inactive members entitled to a return of contributions……	1,110
Inactive employees or beneficiaries currently receiving benefits……	1,729
Total……	5,516

NOTE 8 – ACTUARIAL VALUATION

The total pension liability was determined by an actuarial valuation as of January 1, 2014, using the following actuarial assumptions, applied to all periods included in the measurement that was updated to December 31, 2015:

Valuation date……………………………………	January 1, 2014
Actuarial cost method…………………………	Entry Age Normal Cost Method.
Amortization method…………………………	Closed - Approximate level percent of payroll.
Remaining amortization period………………	20 years for the fresh start base
Asset valuation method………………………	Market value adjusted by accounts payable and receivables adjusted to phase in over 5 years investment gains or losses above or below the expected rate of investment return. The actuarial value of assets must be no less than 90% of the adjusted market value nor more than 110% of the adjusted market value.
Projected salary increases………………….	Select and Ultimate. 7.50% year one, 6.5% year two, 6.00% year three, 5.50% year four, 5.00% year five, 3.75% ultimate rate.
Cost of living adjustments……………………	3.0% of the first $13,000 of a members retirement allowance is assumed to be granted every year.
Rates of retirement……………………………	Varies based upon age for general employees, police and fire employees.
Rates of disability…………………………….	Disability is assumed to be 45% ordinary and 55% accidental for Group 1 and 2 and 10% ordinary and 90% accidental for Group 4.
Mortality Rates:	
Pre-Retirement………………….	The RP-2000 mortality table (sex-distinct) projected with scale BB and Generational Mortality. During employment the healthy employee mortality table is used. Post-employment the healthy annuitant table is used.
Disabled Retiree…………………	The RP-2000 mortality table for healthy annuitants (sex-distinct) projected with scale BB and Generational Mortality set-forward by 2 years. Death is assumed to be due to the same cause as the disability 40% of the time.
Investment rate of return/Discount rate………	8.00% per year

Components of the net pension liability as of December 31, 2015 were as follows:

Total pension liability………………………………………………	$	741,677,667
The pension plan's fiduciary net position………………………		378,338,762
The net pension liability……………………………………………	$	363,338,905
The pension plan's fiduciary net position as a percentage of the total pension liability………………………………………		51.01%

Investment policy: The pension plan’s policy in regard to the allocation of invested assets is established by PRIT and the Board. Plan assets are managed on a total return basis with a long-term objective of achieving a fully funded status for the benefits provided through the pension plan.

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. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan’s target asset allocation as of January 1, 2014 are summarized in the following table:

Asset Class	Long-Term Expected Real Rate of Return	Long-Term Expected Asset Allocation
Core Bonds…………………………	0.97%	13.00%
Value-Added Bonds…………………	3.80%	10.00%
Large Cap Equities…………………	4.61%	14.50%
Mid/Small Cap Equities……………	4.85%	3.50%
International Equities………………	5.10%	16.00%
Emerging Market Equities…………	6.31%	6.00%
Private Equity………………………	6.55%	10.00%
Real Estate…………………………	3.40%	10.00%
Timber/Natural Resources…………	3.64%	4.00%
Hedge Funds…………………………	3.64%	9.00%
Cash/Portfolio Completion…………	0.00%	4.00%

Discount rate: The discount rate used to measure the total pension liability was 8.00%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rate and that contributions will be made at rates equal to the actuarially determined contribution rate. Based on those assumptions, the pension plan’s fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the net position liability to changes in the discount rate. The following presents the net position liability, calculated using the discount rate of 8.00%, as well as what the net position liability would be if it were calculated using a discount rate that is 1-percentage-point lower (7.00%) or 1-percentage-point higher (9.00%) than the current rate.

	1.0% Decrease (7.00%)	Current Discount Rate (8.00%)	1.0% Increase (9.00%)
Essex Regional Retirement System's net pension liability as of December 31, 2015.......	$ 446,289,310	$ 363,338,905	$ 299,228,489

Contributions: Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE 9 – ESSEX AGRICULTURAL AND TECHNICAL HIGH SCHOOL

Chapter 463 of the Acts of 2004 created the Essex North Shore Agricultural and Technical School District (Essex Tech). This legislation established Essex Tech as the successor agency to both the Essex Agricultural and Technical High School and the North Shore Vocational Regional School. Prior to July 1, 2014, the non-teacher employees of the Essex Agricultural and Technical High School were members of ERRS. The legislation required that all active and inactive members be transferred to the Salem Contributory Retirement System. Accordingly, as of June 30, 2014, all active and inactive members of ERRS have been transferred to the Salem Contributory Retirement System. Essex Tech, as the successor agency, is required to reimburse ERRS for the actuarially determined liability associated with the retired members from Essex Agricultural and Technical High School who remain with ERRS. Accordingly, PERAC approved a funding schedule that requires Essex Tech to pay ERRS equal annual assessments of $421,947 from 2017 through 2033. The $4,156,756 present value of these payments has been recorded as an intergovernmental receivable by ERRS as of December 31, 2015.

NOTE 10 – COMMITMENTS AND CONTINGENCIES

Various legal actions and claims are pending against the System. Litigation is subject to many uncertainties, and the outcome of individual litigated matters is not always predictable. Although the amount of liability, if any, at December 31, 2015 cannot be ascertained, management believes any resulting liability should not materially affect the financial position at December 31, 2015.

NOTE 11 – IMPLEMENTATION OF GASB PRONOUNCEMENTS

The following GASB pronouncements will be implemented in the future:

- The GASB issued Statement #72, *Fair Value Measurement and Application,* which is required to be implemented in 2016.
- The GASB issued Statement #76, *The Hierarchy of Generally Accepted Accounting Principles for State and Local Governments*, which is required to be implemented in 2016.

- The GASB issued Statement #78, *Pensions Provided through Certain Multiple-Employer Defined Benefit Pension Plans,* which is required to be implemented in 2016.
- The GASB issued Statement #79, *Certain External Investment Pools and Pool Participants***,** which is required to be implemented in 2016 with certain provisions to be implemented in 2016.
- *The* GASB issued Statement #82, *Pension Issues – an amendment of GASB Statements #67, #68, and #73*, which is required to be implemented in 2017.

Management is currently assessing the impact the implementation of these pronouncements will have on the financial statements.

NOTE 12 – SUBSEQUENT EVENTS

Management has evaluated subsequent events through August 22, 2016, which is the date the financial statements were available to be issued.

Required Supplementary Information

SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

	2014	2015
Total pension liability:		
Service cost………………………………………………………	$ 14,800,758	$ 15,392,788
Interest………………………………………………………………	54,243,222	56,453,975
Changes in benefit terms…………………………………………….	-	-
Differences between expected and actual experience……………	-	-
Changes in assumptions…………………………………………….	-	-
Benefit payments, including refunds or member contributions…..	(42,572,513)	(40,901,999)
Net change in total pension liability……………………………………	26,471,467	30,944,764
Total pension liability, beginning………………………………………	684,261,436	710,732,903
Total pension liability, ending **(a)**………………………………………	$ 710,732,903	$ 741,677,667
Plan fiduciary net position:		
Member contributions……………………………………………………	$ 14,524,722	$ 12,491,708
Employer contributions……………………………………………….	26,140,616	27,966,800
Net investment income (loss)…………………………………………	29,322,861	4,103,832
Retirement benefits and refunds…………………………………………	(42,572,513)	(40,901,999)
Administrative expenses……………………………………………..	(936,725)	(949,046)
Other contribution…………………………………………………….	-	4,156,756
Net increase (decrease) in fiduciary net position…………………….	26,478,961	6,868,051
Fiduciary net position at beginning of year……………………………	344,991,750	371,470,711
Fiduciary net position at end of year **(b)**………………………………	$ 371,470,711	$ 378,338,762
Net pension liability - ending (a) - (b)………………………………	$ 339,262,192	$ 363,338,905
Plan fiduciary net position as a percentage of the total pension liability……………………………………………………….	52.27%	51.01%
Covered-employee payroll……………………………………………	123,190,220	128,258,043
Net pension liability as a percentage of covered-employee payroll…………………………………………………………………	275.40%	283.29%

Note: this schedule is intended to present information for 10 years.
Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF CONTRIBUTIONS

	2014	2015
Actuarially determined contribution……………………	$ 26,066,222	$ 32,050,432
Contributions in relation to the actuarially determined contribution…………………………….	(26,066,222)	(32,123,557)
Contribution deficiency (excess)…………………	$ -	$ (73,125)
Covered-employee payroll…………………………….	$ 123,190,220	$ 128,258,043
Contributions as a percentage of covered-employee payroll…………………………………….	21.16%	25.05%

Note: this schedule is intended to present information for 10 years. Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

SCHEDULE OF INVESTMENT RETURN

	2014	2015
Annual money-weighted rate of return, net of investment expense………………………….	8.48%	1.04%

Note: this schedule is intended to present information for 10 years. Until a 10-year trend is compiled, information is presented for those years for which information is available.

See notes to required supplementary information.

NOTE A – CHANGES IN THE NET PENSION LIABILITY AND RELATED RATIOS

The Schedule of Changes in the Net Pension Liability and Related Ratios includes the detailed changes in the systems total pension liability, changes in the systems net position, and the ending net pension liability. It also demonstrates the plan's net position as a percentage of the total pension liability and the net pension liability as a percentage of covered payroll.

Since the system performs an actuarial valuation bi-annually, there are no reported amounts for the changes in benefit terms, differences between expected and actual experience and changes in assumptions as of December 31, 2015.

NOTE B – CONTRIBUTIONS

Governmental employers are required to pay an annual appropriation as established by PERAC. The total appropriation includes the amounts to pay the pension portion of each member's retirement allowance, an amount to amortize the actuarially determined unfunded liability to zero in accordance with the system's funding schedule, and additional appropriations in accordance with adopted early retirement incentive programs. The total appropriations are payable on July 1 and January 1. Employers may choose to pay the entire appropriation in July at a discounted rate. Accordingly, actual employer contributions may be less than the "total appropriation". The pension fund appropriations are allocated amongst employers based on covered payroll.

NOTE C – MONEY WEIGHTED RATE OF RETURN

The money weighted rate of return is calculated as the internal rate of return on pension plan investments, net of pension plan investment expense. A money weighted rate of return expresses investment performance, net of pension plan investment expense, adjusted for the changing amounts actually invested. Inputs to the money weighted rate of return calculation are determined monthly.

Audit of Specific Elements, Accounts and Items of Financial Statements

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Independent Auditor's Report

To the Honorable Essex Retirement Board
Essex Regional Retirement System
Danvers, Massachusetts

We have audited the accompanying schedule of employer allocations of the Essex Regional Retirement System (ERRS) as of and for the year ended December 31, 2015, and the related notes. We have also audited the total for all entities of the rows titled net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions and total pension expense included in the accompanying schedule of pension amounts by employer of the ERRS Pension Plan as of and for the year ended December 31, 2015, and the related notes.

Management's Responsibility for the Schedules

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

Auditor's Responsibility

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

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

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

Opinions

In our opinion, the schedules referred to above present fairly, in all material respects, the employer allocations and net pension liability, total deferred outflows of resources, total deferred inflows of resources, total contributions and total pension expense for the total of all participating entities for the Essex Regional Retirement System as of and for the year ended December 31, 2015, in accordance with accounting principles generally accepted in the United States of America.

Other Matter

We have audited, in accordance with auditing standards generally accepted in the United States of America, the financial statements of the Essex Regional Retirement System as of and for the year ended December 31, 2015, and our report thereon, dated August 22, 2016, expressed an unmodified opinion on those financial statements.

Restriction on Use

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

Powers & Sullivan LLC

August 22, 2016

SCHEDULE OF EMPLOYER ALLOCATIONS

FOR THE YEAR ENDED DECEMBER 31, 2015

Employer	2016 Pension Fund Appropriation	Current Direct E.R.I. Appropriation	FY 2016 Total Appropriation	Remaining Direct E.R.I. Liability	Allocated Net Pension Liability	Share of Net Pension Liability including E.R.I.	Percent of Total Net Pension Liability including E.R.I.
Retirement Board	$ 105,923	$ -	$ 105,923	$ -	$ 1,374,161	$ 1,374,161	0.378%
Town of Boxford	1,025,780	-	1,025,780	-	13,307,669	13,307,669	3.663%
Town of Essex	473,866	-	473,866	-	6,147,565	6,147,565	1.692%
Town of Georgetown	1,376,998	79,349	1,456,347	228,038	17,864,100	18,092,138	4.979%
Town of Groveland	632,750	7,172	639,922	72,666	8,208,807	8,281,473	2.279%
Town of Hamilton	735,886	-	735,886	-	9,546,806	9,546,806	2.628%
Town of Ipswich	3,027,166	-	3,027,166	-	39,272,090	39,272,090	10.809%
Town of Lynnfield	2,207,657	145,516	2,353,173	500,875	28,640,419	29,141,294	8.020%
Town of Manchester-by-the-Sea	961,669	-	961,669	-	12,475,940	12,475,940	3.434%
Town of Merrimac	671,774	45,935	717,709	128,655	8,715,077	8,843,732	2.434%
Town of Middleton	1,379,786	-	1,379,786	-	17,900,262	17,900,262	4.927%
Town of Nahant	674,562	-	674,562	-	8,751,239	8,751,239	2.409%
Town of Newbury	551,914	-	551,914	-	7,160,105	7,160,105	1.971%
Town of North Andover	4,150,507	-	4,150,507	-	53,845,435	53,845,435	14.820%
Town of Rockport	1,485,709	7,978	1,493,687	21,367	19,274,423	19,295,790	5.311%
Town of Rowley	774,910	-	774,910	-	10,053,076	10,053,076	2.767%
Town of Salisbury	972,819	102,456	1,075,275	274,397	12,620,589	12,894,986	3.549%
Town of Topsfield	964,456	-	964,456	-	12,512,102	12,512,102	3.444%
Town of Wenham	574,214	-	574,214	-	7,449,402	7,449,402	2.050%
Town of West Newbury	512,890	29,416	542,306	78,782	6,653,835	6,732,617	1.853%
East Essex Veterans District	19,512	-	19,512	-	253,135	253,135	0.070%
Byfield Water District	30,662	-	30,662	-	397,784	397,784	0.109%
Lynnfield Center Water District	94,773	-	94,773	-	1,229,513	1,229,513	0.338%
Lynnfield Water District	61,324	-	61,324	-	795,567	795,567	0.219%
NE Massachusetts Mosquito Control District	153,309	-	153,309	-	1,988,918	1,988,918	0.547%
Hamilton-Wenham Regional School	794,422	-	794,422	-	10,306,211	10,306,211	2.837%
Manchester-Essex Regional School	504,528	-	504,528	-	6,545,348	6,545,348	1.801%
Masconomet Regional School	510,103	-	510,103	-	6,617,673	6,617,673	1.821%
Pentucket Regional School	1,014,630	37,680	1,052,310	105,725	13,163,021	13,268,746	3.652%
Triton Regional School	925,432	30,710	956,142	82,247	12,005,832	12,088,079	3.327%
Essex Housing Authority	8,362	4,084	12,446	10,938	108,486	119,424	0.033%
Georgetown Housing Authority	41,812	-	41,812	-	542,432	542,432	0.149%
Groveland Housing Authority	27,874	-	27,874	-	361,621	361,621	0.100%
Hamilton Housing Authority	11,150	-	11,150	-	144,649	144,649	0.040%
Ipswich Housing Authority	94,773	27,045	121,818	72,432	1,229,513	1,301,945	0.358%
Lynnfield Housing Authority	19,512	-	19,512	-	253,135	253,135	0.070%
Manchester Housing Authority	22,299	-	22,299	-	289,297	289,297	0.080%
Middleton Housing Authority	16,725	-	16,725	-	216,973	216,973	0.060%
Nahant Housing Authority	11,150	7,721	18,871	78,235	144,649	222,884	0.061%
North Andover Housing Authority	125,435	13,573	139,008	46,719	1,627,297	1,674,016	0.461%
Rockport Housing Authority	50,174	-	50,174	-	650,919	650,919	0.179%
Rowley Housing Authority	11,150	-	11,150	-	144,649	144,649	0.040%
Salisbury Housing Authority	30,662	-	30,662	-	397,784	397,784	0.109%
Topsfield Housing Authority	13,937	-	13,937	-	180,811	180,811	0.050%
Wenham Housing Authority	19,512	6,114	25,626	16,375	253,135	269,510	0.074%
West Newbury Housing Authority	-	-	-	-	-	-	0.000%
Total	$ 27,874,458	$ 544,749	$ 28,419,207	$ 1,717,451	$ 361,621,454	$ 363,338,905	100.000%

See notes to other supplementary information.

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	Agricultural School Retirees	Retirement Board	Town of Boxford	Town of Essex	Town of Georgetown
Net Pension Liability					
Beginning net pension liability	$ 4,103,556	$ 1,214,284	$ 12,389,026	$ 5,672,204	$ 16,916,706
Ending net pension liability	$ -	$ 1,374,161	$ 13,307,669	$ 6,147,565	$ 18,092,138
Deferred Outflows of Resources					
Differences between expected and actual experience	$ -	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	-	73,522	712,000	328,913	955,783
Changes of assumptions	-	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	47,736	-	20,649	-
Total Deferred Outflows of Resources	$ -	$ 121,258	$ 712,000	$ 349,562	$ 955,783
Deferred Inflows of Resources					
Differences between expected and actual experience	$ -	$ -	$ -	$ -	$ -
Changes of assumptions	-	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	-	44,061	-	290,173
Total Deferred Inflows of Resources	$ -	$ -	$ 44,061	$ -	$ 290,173
Pension Expense					
Proportionate share of plan pension expense	$ 35,168	$ 125,875	$ 1,215,144	$ 561,050	$ 1,935,422
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	-	11,367	(10,491)	4,916	(69,089)
Total Employer Pension Expense	$ 35,168	$ 137,242	$ 1,204,653	$ 565,966	$ 1,866,333
Contributions					
Statutory required contribution	$ 4,156,756	$ 103,904	$ 1,006,232	$ 464,836	$ 1,428,594
Contribution in relation to statutory required contribution	(4,156,756)	(103,904)	(1,007,830)	(464,836)	(1,428,594)
Contribution deficiency/(excess)	$ -	$ -	$ (1,598)	$ -	$ -
Contributions as a percentage of covered payroll	N/A	13.66%	19.84%	20.83%	21.96%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense					
June 30, 2017	$ -	$ 29,398	$ 164,140	$ 85,588	$ 165,334
June 30, 2018	-	29,398	164,140	85,588	165,334
June 30, 2019	-	29,398	164,140	85,588	165,334
June 30, 2020	-	30,790	177,617	91,814	183,425
June 30, 2021	-	2,274	(2,098)	984	(13,817)
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ -	$ 121,258	$ 667,939	$ 349,562	$ 665,610
Discount Rate Sensitivity					
1% decrease (7%)	$ -	$ 1,689,373	$ 16,360,244	$ 7,557,721	$ 22,189,887
Current discount rate (8%)	$ -	$ 1,374,161	$ 13,307,669	$ 6,147,565	$ 18,092,138
1% increase (9%)	$ -	$ 1,130,542	$ 10,948,406	$ 5,057,688	$ 14,925,084
Covered Payroll	$ -	$ 760,843	$ 5,080,198	$ 2,231,674	$ 6,505,666

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	Town of Groveland	Town of Hamilton	Town of Ipswich	Town of Lynnfield
Net Pension Liability				
Beginning net pension liability	$ 7,906,594	$ 9,315,057	$ 36,691,344	$ 26,824,501
Ending net pension liability	$ 8,281,473	$ 9,546,806	$ 39,272,090	$ 29,141,294
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	439,196	510,783	2,101,174	1,532,348
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	-	-	-
Total Deferred Outflows of Resources	$ 439,196	$ 510,783	$ 2,101,174	$ 1,532,348
Deferred Inflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	240,109	375,217	234,773	226,886
Total Deferred Inflows of Resources	$ 240,109	$ 375,217	$ 234,773	$ 226,886
Pension Expense				
Proportionate share of plan pension expense	$ 838,824	$ 866,871	$ 3,598,057	$ 3,268,529
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(57,169)	(89,337)	(55,898)	(54,020)
Total Employer Pension Expense	$ 781,655	$ 777,534	$ 3,542,159	$ 3,214,509
Contributions				
Statutory required contribution	$ 639,922	$ 721,863	$ 2,969,479	$ 2,308,330
Contribution in relation to statutory required contribution	(639,922)	(721,863)	(2,987,388)	(2,316,800)
Contribution deficiency/(excess)	$ -	$ -	$ (17,909)	$ (8,470)
Contributions as a percentage of covered payroll	24.02%	20.80%	21.97%	23.26%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense				
June 30, 2017	$ 50,552	$ 35,942	$ 459,452	$ 321,816
June 30, 2018	50,552	35,942	459,452	321,816
June 30, 2019	50,552	35,942	459,452	321,816
June 30, 2020	58,865	45,610	499,224	350,821
June 30, 2021	(11,434)	(17,870)	(11,179)	(10,807)
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 199,087	$ 135,566	$ 1,866,401	$ 1,305,462
Discount Rate Sensitivity				
1% decrease (7%)	$ 10,164,446	$ 11,736,696	$ 48,280,501	$ 35,710,965
Current discount rate (8%)	$ 8,281,473	$ 9,546,806	$ 39,272,090	$ 29,141,294
1% increase (9%)	$ 6,826,166	$ 7,854,291	$ 32,309,699	$ 24,063,749
Covered Payroll	$ 2,663,576	$ 3,470,734	$ 13,598,463	$ 9,961,467

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	Town of Manchester-by-the-Sea	Town of Merrimac	Town of Middleton	Town of Nahant
Net Pension Liability				
Beginning net pension liability	$ 10,868,675	$ 8,126,535	$ 16,640,684	$ 8,067,505
Ending net pension liability	$ 12,475,940	$ 8,843,732	$ 17,900,262	$ 8,751,239
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	667,500	466,283	957,718	468,217
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	558,641	-	-	35,059
Total Deferred Outflows of Resources	$ 1,226,141	$ 466,283	$ 957,718	$ 503,276
Deferred Inflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	40,052	40,045	-
Total Deferred Inflows of Resources	$ -	$ 40,052	$ 40,045	$ -
Pension Expense				
Proportionate share of plan pension expense	$ 1,144,189	$ 970,041	$ 1,634,513	$ 798,731
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	133,009	(9,536)	(9,535)	8,348
Total Employer Pension Expense	$ 1,277,198	$ 960,505	$ 1,624,978	$ 807,079
Contributions				
Statutory required contribution	$ 943,343	$ 704,032	$ 1,353,492	$ 661,707
Contribution in relation to statutory required contribution	(943,343)	(704,032)	(1,355,445)	(661,707)
Contribution deficiency/(excess)	$ -	$ -	$ (1,953)	$ -
Contributions as a percentage of covered payroll	21.48%	22.96%	22.11%	21.62%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense				
June 30, 2017	$ 296,725	$ 104,828	$ 225,362	$ 123,186
June 30, 2018	296,725	104,828	225,362	123,186
June 30, 2019	296,725	104,828	225,362	123,186
June 30, 2020	309,360	113,654	243,490	132,049
June 30, 2021	26,606	(1,907)	(1,903)	1,669
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 1,226,141	$ 426,231	$ 917,673	$ 503,276
Discount Rate Sensitivity				
1% decrease (7%)	$ 15,337,728	$ 10,842,836	$ 22,006,306	$ 10,758,638
Current discount rate (8%)	$ 12,475,940	$ 8,843,732	$ 17,900,262	$ 8,751,239
1% increase (9%)	$ 10,264,131	$ 7,298,671	$ 14,726,796	$ 7,199,767
Covered Payroll	$ 4,392,184	$ 3,066,196	$ 6,129,251	$ 3,060,264

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	Town of Newbury	Town of North Andover	Town of Rockport	Town of Rowley
Net Pension Liability				
Beginning net pension liability	$ 6,480,618	$ 49,719,115	$ 17,788,267	$ 9,078,854
Ending net pension liability	$ 7,160,105	$ 53,845,435	$ 19,295,790	$ 10,053,076
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	383,087	2,880,892	1,031,239	537,870
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	125,241	150,890	61,215	192,084
Total Deferred Outflows of Resources	$ 508,328	$ 3,031,782	$ 1,092,454	$ 729,954
Deferred Inflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	-	-	-
Total Deferred Inflows of Resources	$ -	$ -	$ -	$ -
Pension Expense				
Proportionate share of plan pension expense	$ 654,552	$ 4,942,880	$ 1,788,498	$ 919,192
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	29,819	35,926	14,575	45,734
Total Employer Pension Expense	$ 684,371	$ 4,978,806	$ 1,803,073	$ 964,926
Contributions				
Statutory required contribution	$ 541,397	$ 4,071,413	$ 1,465,223	$ 760,143
Contribution in relation to statutory required contribution	(541,397)	(4,100,517)	(1,465,223)	(760,143)
Contribution deficiency/(excess)	$ -	$ (29,104)	$ -	$ -
Contributions as a percentage of covered payroll	23.33%	20.94%	21.83%	23.12%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense				
June 30, 2017	$ 123,778	$ 742,516	$ 267,505	$ 177,656
June 30, 2018	123,778	742,516	267,505	177,656
June 30, 2019	123,778	742,516	267,505	177,656
June 30, 2020	131,029	797,047	287,025	187,837
June 30, 2021	5,965	7,187	2,914	9,149
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 508,328	$ 3,031,782	$ 1,092,454	$ 729,954
Discount Rate Sensitivity				
1% decrease (7%)	$ 8,802,552	$ 66,196,746	$ 23,717,045	$ 12,359,097
Current discount rate (8%)	$ 7,160,105	$ 53,845,435	$ 19,295,790	$ 10,053,076
1% increase (9%)	$ 5,890,719	$ 44,299,393	$ 15,878,705	$ 8,270,807
Covered Payroll	$ 2,320,540	$ 19,581,065	$ 6,712,792	$ 3,287,547

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	Town of Salisbury	Town of Topsfield	Town of Wenham	Town of West Newbury
Net Pension Liability				
Beginning net pension liability	$ 12,408,280	$ 11,477,481	$ 6,750,090	$ 6,466,276
Ending net pension liability	$ 12,894,986	$ 12,512,102	$ 7,449,402	$ 6,732,617
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	675,239	669,435	398,565	356,000
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	96,005	124,166	-
Total Deferred Outflows of Resources	$ 675,239	$ 765,440	$ 522,731	$ 356,000
Deferred Inflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	573,157	-	-	241,005
Total Deferred Inflows of Resources	$ 573,157	$ -	$ -	$ 241,005
Pension Expense				
Proportionate share of plan pension expense	$ 1,534,211	$ 1,145,020	$ 680,933	$ 713,108
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(136,466)	22,858	29,563	(57,382)
Total Employer Pension Expense	$ 1,397,745	$ 1,167,878	$ 710,496	$ 655,726
Contributions				
Statutory required contribution	$ 1,054,784	$ 946,077	$ 563,272	$ 531,972
Contribution in relation to statutory required contribution	(1,065,237)	(948,614)	(563,272)	(531,972)
Contribution deficiency/(excess)	$ (10,453)	$ (2,537)	$ -	$ -
Contributions as a percentage of covered payroll	22.40%	21.14%	21.84%	22.36%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense				
June 30, 2017	$ 29,149	$ 187,049	$ 127,318	$ 29,933
June 30, 2018	29,149	187,049	127,318	29,933
June 30, 2019	29,149	187,049	127,318	29,933
June 30, 2020	41,930	199,720	134,862	36,672
June 30, 2021	(27,295)	4,573	5,915	(11,476)
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 102,082	$ 765,440	$ 522,731	$ 114,995
Discount Rate Sensitivity				
1% decrease (7%)	$ 15,789,954	$ 15,382,185	$ 9,158,180	$ 8,258,904
Current discount rate (8%)	$ 12,894,986	$ 12,512,102	$ 7,449,402	$ 6,732,617
1% increase (9%)	$ 10,657,533	$ 10,293,882	$ 6,128,727	$ 5,552,985
Covered Payroll	$ 4,755,506	$ 4,486,856	$ 2,579,576	$ 2,379,301

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	East Essex Veterans District	Byfield Water District	Lynnfield Center Water District	Lynnfield Water District
Net Pension Liability				
Beginning net pension liability	$ 336,007	$ 372,602	$ 1,081,212	$ 675,342
Ending net pension liability	$ 253,135	$ 397,784	$ 1,229,513	$ 795,567
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	13,543	21,283	65,783	42,565
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	-	46,935	49,884
Total Deferred Outflows of Resources	$ 13,543	$ 21,283	$ 112,718	$ 92,449
Deferred Inflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	81,535	3,148	-	-
Total Deferred Inflows of Resources	$ 81,535	$ 3,148	$ -	$ -
Pension Expense				
Proportionate share of plan pension expense	$ 22,212	$ 36,255	$ 112,673	$ 73,117
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(19,413)	(750)	11,175	11,877
Total Employer Pension Expense	$ 2,799	$ 35,505	$ 123,848	$ 84,994
Contributions				
Statutory required contribution	$ 19,140	$ 30,078	$ 92,967	$ 60,155
Contribution in relation to statutory required contribution	(19,140)	(30,078)	(92,967)	(60,155)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	16.11%	22.29%	21.59%	23.50%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense				
June 30, 2017	$ (16,091)	$ 4,470	$ 27,310	$ 22,317
June 30, 2018	(16,091)	4,470	27,310	22,317
June 30, 2019	(16,091)	4,470	27,310	22,317
June 30, 2020	(15,835)	4,873	28,555	23,123
June 30, 2021	(3,884)	(148)	2,233	2,375
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ (67,992)	$ 18,135	$ 112,718	$ 92,449
Discount Rate Sensitivity				
1% decrease (7%)	$ 311,200	$ 489,029	$ 1,511,544	$ 978,058
Current discount rate (8%)	$ 253,135	$ 397,784	$ 1,229,513	$ 795,567
1% increase (9%)	$ 208,258	$ 327,262	$ 1,011,538	$ 654,524
Covered Payroll	$ 118,812	$ 134,914	$ 430,641	$ 255,996

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	NE MA Mosquito Control District	Hamilton-Wenham Regional School	Manchester-Essex Regional School	Masconomet Regional School
Net Pension Liability				
Beginning net pension liability	$ 1,789,822	$ 9,315,057	$ 6,041,480	$ 6,211,147
Ending net pension liability	$ 1,988,918	$ 10,306,211	$ 6,545,348	$ 6,617,673
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	106,413	551,413	350,196	354,065
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	43,112	190,810	20,175	-
Total Deferred Outflows of Resources	$ 149,525	$ 742,223	$ 370,371	$ 354,065
Deferred Inflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	-	-	62,361
Total Deferred Inflows of Resources	$ -	$ -	$ -	$ 62,361
Pension Expense				
Proportionate share of plan pension expense	$ 181,909	$ 942,271	$ 597,332	$ 604,140
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	10,265	45,431	4,804	(14,848)
Total Employer Pension Expense	$ 192,174	$ 987,702	$ 602,136	$ 589,292
Contributions				
Statutory required contribution	$ 150,387	$ 779,283	$ 494,914	$ 500,382
Contribution in relation to statutory required contribution	(150,387)	(779,283)	(494,914)	(501,483)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ (1,101)
Contributions as a percentage of covered payroll	22.63%	21.31%	20.00%	21.35%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense				
June 30, 2017	$ 36,365	$ 180,675	$ 90,695	$ 71,993
June 30, 2018	36,365	180,675	90,695	71,993
June 30, 2019	36,365	180,675	90,695	71,993
June 30, 2020	38,379	191,112	97,324	78,695
June 30, 2021	2,051	9,086	962	(2,970)
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 149,525	$ 742,223	$ 370,371	$ 291,704
Discount Rate Sensitivity				
1% decrease (7%)	$ 2,445,145	$ 12,670,297	$ 8,046,750	$ 8,135,665
Current discount rate (8%)	$ 1,988,918	$ 10,306,211	$ 6,545,348	$ 6,617,673
1% increase (9%)	$ 1,636,311	$ 8,479,065	$ 5,384,950	$ 5,444,452
Covered Payroll	$ 664,693	$ 3,656,348	$ 2,474,424	$ 2,349,100

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	Pentucket Regional School	Triton Regional School	Essex Housing Authority	Georgetown Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 11,737,756	$ 10,523,695	$ 16,946	$ 505,675
Ending net pension liability	$ 13,268,746	$ 12,088,079	$ 119,424	$ 542,432
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	704,261	642,348	5,804	29,022
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	371,299	485,221	67,174	-
Total Deferred Outflows of Resources	$ 1,075,560	$ 1,127,569	$ 72,978	$ 29,022
Deferred Inflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	-	-	2,349
Total Deferred Inflows of Resources	$ -	$ -	$ -	$ 2,349
Pension Expense				
Proportionate share of plan pension expense	$ 1,348,931	$ 1,213,993	$ 25,952	$ 49,459
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	88,405	115,529	15,994	(559)
Total Employer Pension Expense	$ 1,437,336	$ 1,329,522	$ 41,946	$ 48,900
Contributions				
Statutory required contribution	$ 1,032,257	$ 937,921	$ 12,446	$ 41,015
Contribution in relation to statutory required contribution	(1,032,257)	(937,921)	(12,446)	(41,015)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	22.87%	21.63%	21.00%	19.48%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense				
June 30, 2017	$ 261,137	$ 273,076	$ 17,417	$ 6,559
June 30, 2018	261,137	273,076	17,417	6,559
June 30, 2019	261,137	273,076	17,417	6,559
June 30, 2020	274,468	285,235	17,527	7,108
June 30, 2021	17,681	23,106	3,200	(112)
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 1,075,560	$ 1,127,569	$ 72,978	$ 26,673
Discount Rate Sensitivity				
1% decrease (7%)	$ 16,288,139	$ 14,842,032	$ 144,309	$ 666,858
Current discount rate (8%)	$ 13,268,746	$ 12,088,079	$ 119,424	$ 542,432
1% increase (9%)	$ 10,935,126	$ 9,959,614	$ 100,191	$ 446,267
Covered Payroll	$ 4,514,109	$ 4,336,928	$ 59,280	$ 210,544

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	Groveland Housing Authority	Hamilton Housing Authority	Ipswich Housing Authority	Lynnfield Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 336,007	$ 136,399	$ 1,259,967	$ 236,203
Ending net pension liability	$ 361,621	$ 144,649	$ 1,301,945	$ 253,135
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	19,348	7,739	65,783	13,543
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	-	-	-
Total Deferred Outflows of Resources	$ 19,348	$ 7,739	$ 65,783	$ 13,543
Deferred Inflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	674	1,875	97,210	1,274
Total Deferred Inflows of Resources	$ 674	$ 1,875	$ 97,210	$ 1,274
Pension Expense				
Proportionate share of plan pension expense	$ 32,983	$ 13,390	$ 213,376	$ 23,079
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(161)	(447)	(23,145)	(303)
Total Employer Pension Expense	$ 32,822	$ 12,943	$ 190,231	$ 22,776
Contributions				
Statutory required contribution	$ 27,343	$ 11,150	$ 121,818	$ 19,140
Contribution in relation to statutory required contribution	(27,343)	(11,150)	(121,818)	(19,140)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	21.88%	22.23%	27.85%	20.67%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense				
June 30, 2017	$ 4,585	$ 1,452	$ (7,010)	$ 3,019
June 30, 2018	4,585	1,452	(7,010)	3,019
June 30, 2019	4,585	1,452	(7,010)	3,019
June 30, 2020	4,951	1,598	(5,765)	3,275
June 30, 2021	(32)	(90)	(4,632)	(63)
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 18,674	$ 5,864	$ (31,427)	$ 12,269
Discount Rate Sensitivity				
1% decrease (7%)	$ 444,572	$ 177,829	$ 1,583,976	$ 311,200
Current discount rate (8%)	$ 361,621	$ 144,649	$ 1,301,945	$ 253,135
1% increase (9%)	$ 297,511	$ 119,004	$ 1,083,969	$ 208,258
Covered Payroll	$ 124,981	$ 50,153	$ 437,357	$ 92,607

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	Manchester Housing Authority	Middleton Housing Authority	Nahant Housing Authority	North Andover Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 269,471	$ 269,471	$ 180,867	$ 1,585,558
Ending net pension liability	$ 289,297	$ 216,973	$ 222,884	$ 1,674,016
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	15,478	11,609	7,739	87,065
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	-	-	-
Total Deferred Outflows of Resources	$ 15,478	$ 11,609	$ 7,739	$ 87,065
Deferred Inflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	1,074	54,981	37,920	62,389
Total Deferred Inflows of Resources	$ 1,074	$ 54,981	$ 37,920	$ 62,389
Pension Expense				
Proportionate share of plan pension expense	$ 26,380	$ 19,199	$ 99,303	$ 208,383
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(256)	(13,091)	(9,028)	(14,854)
Total Employer Pension Expense	$ 26,124	$ 6,108	$ 90,275	$ 193,529
Contributions				
Statutory required contribution	$ 21,874	$ 16,406	$ 18,511	$ 136,359
Contribution in relation to statutory required contribution	(21,874)	(16,406)	(18,511)	(136,359)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	23.20%	19.78%	41.11%	23.45%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense				
June 30, 2017	$ 3,540	$ (10,244)	$ (7,129)	$ 6,500
June 30, 2018	3,540	(10,244)	(7,129)	6,500
June 30, 2019	3,540	(10,244)	(7,129)	6,500
June 30, 2020	3,833	(10,024)	(6,983)	8,148
June 30, 2021	(49)	(2,616)	(1,811)	(2,972)
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 14,404	$ (43,372)	$ (30,181)	$ 24,676
Discount Rate Sensitivity				
1% decrease (7%)	$ 355,657	$ 266,743	$ 256,063	$ 2,047,292
Current discount rate (8%)	$ 289,297	$ 216,973	$ 222,884	$ 1,674,016
1% increase (9%)	$ 238,009	$ 178,507	$ 197,239	$ 1,385,519
Covered Payroll	$ 94,290	$ 82,948	$ 45,027	$ 581,402

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	Rockport Housing Authority	Rowley Housing Authority	Salisbury Housing Authority	Topsfield Housing Authority
Net Pension Liability				
Beginning net pension liability	$ 538,943	$ 136,399	$ 336,007	$ 169,667
Ending net pension liability	$ 650,919	$ 144,649	$ 397,784	$ 180,811
Deferred Outflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	34,826	7,739	21,283	9,674
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	51,759	-	26,280	-
Total Deferred Outflows of Resources	$ 86,585	$ 7,739	$ 47,563	$ 9,674
Deferred Inflows of Resources				
Differences between expected and actual experience	$ -	$ -	$ -	$ -
Changes of assumptions	-	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	1,875	-	1,674
Total Deferred Inflows of Resources	$ -	$ 1,875	$ -	$ 1,674
Pension Expense				
Proportionate share of plan pension expense	$ 59,941	$ 13,178	$ 37,158	$ 16,476
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	12,324	(447)	6,257	(399)
Total Employer Pension Expense	$ 72,265	$ 12,731	$ 43,415	$ 16,077
Contributions				
Statutory required contribution	$ 49,218	$ 10,938	$ 30,662	$ 13,671
Contribution in relation to statutory required contribution	(49,218)	(10,938)	(30,662)	(13,671)
Contribution deficiency/(excess)	$ -	$ -	$ -	$ -
Contributions as a percentage of covered payroll	27.60%	21.32%	22.91%	22.84%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense				
June 30, 2017	$ 20,866	$ 1,452	$ 11,477	$ 1,974
June 30, 2018	20,866	1,452	11,477	1,974
June 30, 2019	20,866	1,452	11,477	1,974
June 30, 2020	21,525	1,598	11,880	2,157
June 30, 2021	2,462	(90)	1,252	(79)
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ 86,585	$ 5,864	$ 47,563	$ 8,000
Discount Rate Sensitivity				
1% decrease (7%)	$ 800,229	$ 177,829	$ 489,029	$ 222,286
Current discount rate (8%)	$ 650,919	$ 144,649	$ 397,784	$ 180,811
1% increase (9%)	$ 535,520	$ 119,004	$ 327,262	$ 148,756
Covered Payroll	$ 178,300	$ 51,314	$ 133,809	$ 59,848

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(continued)

SCHEDULE OF PENSION AMOUNTS BY EMPLOYER

FOR THE YEAR ENDED DECEMBER 31, 2015

	Wenham Housing Authority	West Newbury Housing Authority	Totals
Net Pension Liability			
Beginning net pension liability	$ 261,572	$ 33,268	$ 339,262,192
Ending net pension liability	$ 269,510	$ -	$ 363,338,905
Deferred Outflows of Resources			
Differences between expected and actual experience	$ -	$ -	$ -
Net difference between projected and actual investment earnings on pension plan investments	13,543	-	19,347,829
Changes of assumptions	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	-	-	2,764,335
Total Deferred Outflows of Resources	$ 13,543	$ -	$ 22,112,164
Deferred Inflows of Resources			
Differences between expected and actual experience	$ -	$ -	$ -
Changes of assumptions	-	-	-
Changes in proportion and differences between employer contributions and proportionate share of contributions	21,765	26,753	2,764,335
Total Deferred Inflows of Resources	$ 21,765	$ 26,753	$ 2,764,335
Pension Expense			
Proportionate share of plan pension expense	$ 45,941	$ (290)	$ 35,387,549
Net amortization of deferred amounts from changes in proportion and differences between employer contributions and proportionate share of contributions	(5,182)	(6,370)	-
Total Employer Pension Expense	$ 40,759	$ (6,660)	$ 35,387,549
Contributions			
Statutory required contribution	$ 25,626	$ -	$ 32,050,432
Contribution in relation to statutory required contribution	(25,626)	-	(32,123,557)
Contribution deficiency/(excess)	$ -	$ -	$ (73,125)
Contributions as a percentage of covered payroll	26.55%	N/A	25.05%
Deferred Inflows/(Outflows) Recognized in Future Pension Expense			
June 30, 2017	$ (1,860)	$ (6,370)	$ 4,745,402
June 30, 2018	(1,860)	(6,370)	4,745,402
June 30, 2019	(1,860)	(6,370)	4,745,402
June 30, 2020	(1,605)	(6,370)	5,111,623
June 30, 2021	(1,037)	(1,273)	-
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense	$ (8,222)	$ (26,753)	$ 19,347,829
Discount Rate Sensitivity			
1% decrease (7%)	$ 327,575	$ -	$ 446,289,310
Current discount rate (8%)	$ 269,510	$ -	$ 363,338,905
1% increase (9%)	$ 224,632	$ -	$ 299,228,489
Covered Payroll	$ 96,519	$ -	$ 128,258,043

See notes to schedule of employer allocations and schedule of pension amounts by employer.

(concluded)

NOTE I – Schedule of Employer Allocations

Governmental Accounting Standards Board (GASB) Statement #68 requires employers participating in a cost-sharing pension plan to recognize pension liabilities as employees provide services to the government and earn their pension benefits. For the first time, employers participating in cost-sharing plans are required to recognize their proportionate share of the plan's collective pension amounts for all benefits provided through the plan including the net pension liability, deferred outflows of resources, deferred inflows of resources, contributions and pension expense.

GASB Statement #68 requires the allocation of the collective pension amounts be consistent with the manner in which contributions to the plan are determined. As permissible under GASB Statement #68, The Schedule of Employer Allocations is used to demonstrate the allocation of Essex Regional Retirement System's collective pension amounts.

Massachusetts General Law (MGL) Chapter 32 Section 22 Paragraph 7c dictates that Massachusetts cost sharing defined benefit pension plans allocate the annual required pension fund appropriation to employer units based on their proportionate share of the aggregate of the annual rates of regular compensation of all members in service of the system who are employees of any government unit at the close of business on the September 30th immediately preceding the fiscal year. Accordingly, the proportionate aggregate rates of regular compensation as of the close of business on September 30, 2014 were applied to allocate the System's fiscal year 2016 pension fund appropriation by member unit.

The beginning net pension liability was updated to reflect the transfer of the active and inactive members of the Essex Agricultural and Technical School (the school) by excluding any members who were employed by the school at the end of the measurement period and were later transferred to the Salem Contributory Retirement System. The beginning net pension liability for the school's retired, disabled, or beneficiary members was allocated directly to the school, and the school's proportionate share of the total actuarial accrued liability was used to determine the school's portion of the fiduciary net position, net 3(8)c liability, administrative expense, and benefits paid during the prior measurement period. During fiscal year 2015, PERAC approved a funding schedule for Essex Tech, as the successor agency, to pay ERRS equal annual payments of $421,947 from 2017 through 2033, which represents the actuarially determined net pension liability for the school's retired, disabled, or beneficiary members of ERRS. A receivable has been recorded for the present value of these future payments which offsets the future pension liability. Accordingly, there is no net pension liability reported for the Agricultural School Retirees as of December 31, 2015.

When a member unit accepts an Early Retirement Incentive Program (E.R.I. or ERIP), PERAC completes an analysis of the costs and liabilities attributable to the additional benefits payable in accordance with the ERIP. The accrued liability for the members who accept the ERIP as retirees including the ERIP less the accrued liability for the members as active employees excluding the ERIP represents the increase in accrued liability due to the ERIP. The net increase is amortized for each member unit accepting the ERIP, and is separately identified in the system's funding schedule. The 2002 ERIP amortization is straight line ending in fiscal 2019, except Nahant Housing which is increasing at 4.5% per year ending in 2028 and Essex Regional Retirement Board which was straight line and ended in fiscal 2012. The 2003 ERI amortization is straight line ending in fiscal 2020, except for Groveland which is increasing at 4.5% per year ending in 2028 and Essex Regional Retirement Board which was straight line and ended in fiscal 2012.

The allocation percentage of the total net pension liability is a blended rate of the following items. (1) The proportionate share of active employer's covered payroll is applied to the fiscal year 2016 pension fund appropriation calculated by the actuary. (2) Current Direct E.R.I. appropriation is a direct current charge calculated by PERAC for only the employers that accepted the ERIP. This direct charge backed out of the total pension fund appropriation to calculate the percentage to be allocated (3) Remaining Direct E.R.I. liability is the future E.R.I. liability associated directly to those employers that accepted the ERIP. This direct liability is added back to those employers once the non-ERIP liability has been allocated.

NOTE II – Schedule of Pension Amounts by Employer

The Schedule of Pension Amounts by Employer presents the net pension liability, the various categories of deferred outflows of resources and deferred inflows of resources, contributions and pension expense for all participating employers including differences between expected and actual economic experience; differences between projected and actual investment earnings, net; and changes of assumptions. Since the system performs an actuarial valuation bi-annually, there are no reported differences between expected and actual experience or a change of assumptions as of December 31, 2015.

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