

ESSEX REGIONAL RETIREMENT SYSTEM

FINANCIAL STATEMENTS

YEAR ENDED DECEMBER 31, 2016

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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, 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.

	<u>2016</u>	<u>2015</u>
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.....	<u>204,741</u>	<u>205,425</u>
Total assets.....	<u>404,146,831</u>	<u>379,239,672</u>
Liabilities:		
Accounts payable.....	1,216,758	900,910
Abandoned property.....	<u>190</u>	<u>-</u>
Total liabilities.....	<u>1,216,948</u>	<u>900,910</u>
Net Position Restricted for Pension Benefits.....	<u>\$ 402,929,883</u>	<u>\$ 378,338,762</u>

	<u>2016</u>	<u>2015</u>
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.....	<u>-</u>	<u>4,156,756</u>
Total contributions.....	<u>46,492,991</u>	<u>48,190,509</u>
Net investment income (loss):		
Total investment income (loss).....	28,610,761	6,246,628
Less, investment expenses.....	<u>(2,203,765)</u>	<u>(2,142,796)</u>
Net investment income (loss).....	<u>26,406,996</u>	<u>4,103,832</u>
Total additions.....	<u>72,899,987</u>	<u>52,294,341</u>
Deductions:		
Administration.....	975,517	949,046
Retirement benefits, refunds and transfers.....	<u>47,333,349</u>	<u>44,477,244</u>
Total deductions.....	<u>48,308,866</u>	<u>45,426,290</u>
Net increase (decrease) in fiduciary net position.....	24,591,121	6,868,051
Fiduciary net position at beginning of year.....	<u>378,338,762</u>	<u>371,470,711</u>
Fiduciary net position at end of year.....	<u>\$ 402,929,883</u>	<u>\$ 378,338,762</u>

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.....		<u>397,333,654</u>
Receivables:		
Members contributions.....		991,836
Essex Agricultural and Technical High School.....		3,734,809
Other.....		141
Total receivables.....		<u>4,726,786</u>
Capital assets, net of accumulated depreciation.....		<u>204,741</u>
Total assets.....		<u>404,146,831</u>

Liabilities

Accounts payable.....		1,216,758
Abandoned property.....		190
Total liabilities.....		<u>1,216,948</u>

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.....	<u>345,616</u>
 Total contributions.....	 <u>46,492,991</u>
Net investment income (loss):	
Total investment income (loss).....	28,610,761
 Less, investment expenses.....	 <u>(2,203,765)</u>
 Net investment income (loss).....	 <u>26,406,996</u>
 Total additions.....	 <u>72,899,987</u>
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.....	<u>42,130,565</u>
 Total deductions.....	 <u>48,308,866</u>
 Net increase (decrease) in fiduciary net position.....	 24,591,121
 Fiduciary net position at beginning of year.....	 <u>378,338,762</u>
 Fiduciary net position at end of year.....	 <u>\$ 402,929,883</u>

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:

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

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:

Investment Type	12/31/2016	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by fair value level.....				
<u>Debt Securities</u>				
Fixed Income.....	\$ 5,600	\$ 5,600	\$ -	\$ -
<u>Other Investments</u>				
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:

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

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:

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

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.....	<u>1,798</u>
 Total.....	 <u><u>5,669</u></u>

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.....	<u>402,929,883</u>
The net pension liability.....	<u>\$ 385,287,832</u>
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%
Small/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.....	<u>(42,572,513)</u>	<u>(40,901,999)</u>	<u>(43,168,107)</u>
Net change in total pension liability.....	26,471,467	30,944,764	46,540,048
Total pension liability, beginning.....	<u>684,261,436</u>	<u>710,732,903</u>	<u>741,677,667</u>
Total pension liability, ending (a)	<u>\$ 710,732,903</u>	<u>\$ 741,677,667</u>	<u>\$ 788,217,715</u>
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.....	<u>-</u>	<u>4,156,756</u>	<u>-</u>
Net increase (decrease) in fiduciary net position.....	26,478,961	6,868,051	24,591,121
Fiduciary net position at beginning of year.....	<u>344,991,750</u>	<u>371,470,711</u>	<u>378,338,762</u>
Fiduciary net position at end of year (b)	<u>\$ 371,470,711</u>	<u>\$ 378,338,762</u>	<u>\$ 402,929,883</u>
Net pension liability - ending (a) - (b)	<u>\$ 339,262,192</u>	<u>\$ 363,338,905</u>	<u>\$ 385,287,832</u>
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

	<u>2014</u>	<u>2015</u>	<u>2016</u>
Actuarially determined contribution.....	\$ 26,066,222	\$ 32,050,432	\$ 29,420,338
Contributions in relation to the actuarially determined contribution.....	<u>(26,066,222)</u>	<u>(32,123,557)</u>	<u>(29,463,314)</u>
Contribution deficiency (excess).....	<u>\$ -</u>	<u>\$ (73,125)</u>	<u>\$ (42,976)</u>
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

	<u>2014</u>	<u>2015</u>	<u>2016</u>
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.....	<u>\$ 717,648</u>	<u>\$ 1,215,970</u>	<u>\$ 3,428,670</u>	<u>\$ 2,641,558</u>
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.....	<u>\$ 669,354</u>	<u>\$ 476,048</u>	<u>\$ 2,256,239</u>	<u>\$ 854,637</u>
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.....	<u>(137,279)</u>	<u>(16,516)</u>	<u>(379,933)</u>	<u>(84,930)</u>
Total Employer Pension Expense.....	<u>\$ 824,271</u>	<u>\$ 1,202,921</u>	<u>\$ 4,214,017</u>	<u>\$ 3,454,398</u>
Contributions				
Statutory required contribution.....	\$ 628,220	\$ 794,132	\$ 2,991,712	\$ 2,418,319
Contribution in relation to statutory required contribution.....	<u>(628,220)</u>	<u>(794,132)</u>	<u>(3,009,923)</u>	<u>(2,427,649)</u>
Contribution deficiency/(excess).....	<u>\$ -</u>	<u>\$ -</u>	<u>\$ (18,211)</u>	<u>\$ (9,330)</u>
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.....	<u>(30,931)</u>	<u>131,820</u>	<u>(45,632)</u>	<u>181,389</u>
June 30, 2021.....	<u>(6,359)</u>	<u>26,822</u>	<u>(18,638)</u>	<u>29,389</u>
Total Deferred Inflows/(Outflows) Recognized in Future Pension Expense.....	<u>\$ 48,294</u>	<u>\$ 739,922</u>	<u>\$ 1,172,431</u>	<u>\$ 1,786,921</u>
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.....	<u>\$ 744,090</u>	<u>\$ 5,796,687</u>	<u>\$ 2,185,642</u>	<u>\$ 1,315,860</u>
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.....	<u>\$ 189,580</u>	<u>\$ 1,046,269</u>	<u>\$ 377,145</u>	<u>\$ 197,775</u>
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.....	<u>\$ 886,077</u>	<u>\$ 6,905,618</u>	<u>\$ 2,512,518</u>	<u>\$ 1,367,040</u>
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).....	<u>\$ -</u>	<u>\$ (1,591)</u>	<u>\$ -</u>	<u>\$ -</u>
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.....	<u>\$ 554,510</u>	<u>\$ 4,750,418</u>	<u>\$ 1,808,497</u>	<u>\$ 1,118,085</u>
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.....	<u>\$ 29,786</u>	<u>\$ 9,928</u>	<u>\$ 146,010</u>	<u>\$ 23,211</u>
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.....	<u>\$ 34,326</u>	<u>\$ 30,996</u>	<u>\$ 99,171</u>	<u>\$ 5,812</u>
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.....	<u>\$ 33,181</u>	<u>\$ 6,312</u>	<u>\$ 144,002</u>	<u>\$ 30,748</u>
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).....	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
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.....	<u>\$ (4,540)</u>	<u>\$ (21,068)</u>	<u>\$ 46,839</u>	<u>\$ 17,399</u>
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.