

**Hampshire County
Retirement System**

**Independent Auditors' Report and
Management's Financial Statements**

December 31, 2019

Ron L. Beaulieu & Company

CERTIFIED PUBLIC ACCOUNTANTS

HAMPSHIRE COUNTY RETIREMENT SYSTEM

DECEMBER 31, 2019

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INDEPENDENT AUDITORS' REPORT

To the Retirement Board of
Hampshire County Retirement System
Northampton, Massachusetts

We have audited the accompanying financial statements of Hampshire County Retirement System as of and for the year ended December 31, 2019, and the related notes to the financial statements, as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

Auditors' 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. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

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

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

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of Hampshire County Retirement System, as of December 31, 2019, and the changes in 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 the management's discussion and analysis on pages 3.1 through 3.6 and the post employment benefit schedules on pages 17 through 20 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.

Ron L. Beaulieu & Co.

Portland, Maine
January 05, 2021

Management's Discussion and Analysis

Year ended December 31, 2019

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

Financial Highlights

- The System's assets exceeded its liabilities at the close of the most recent year by \$358.99 million (net position).
- The System's net position increased by \$50.05 million for the year ended December 31, 2019.
- Total investment income was \$ 52.28 million; investment expenses were \$2.17 million; and net investment income was \$50.13 million.
- Total contributions were \$34.84 million including \$24.29 million from employers, \$8.42 million from members, \$2.12 million from other systems and non-employer entities.
- Retirement benefits, refunds and transfers amounted to \$34.07 million.
- Administrative expenses were \$842,372.
- The Total Pension Liability is \$558.76 million as of December 31, 2019 while the Net Pension Liability is \$199.77 million.
- For reporting purposes in accordance with the Government Accounting Standards Board (GASB), the Plan's fiduciary net position as a percentage of the total pension liability increased to 64.25%.
- The Plan's assets are held in trust to meet future benefit payments.

Overview of the Financial Statements

The basic financial statements consist of the: (1) Statements of Fiduciary Net Position; (2) Statements of Changes in Fiduciary Net Position; (3) Notes to the Financial Statements; and (4) Required Supplementary Information.

The Statements of Fiduciary Net Position report the Plan's assets, liabilities, and net position restricted for pensions at the end of the calendar year calculated using the following formula: $\text{Assets} - \text{Liabilities} = \text{Net position restricted for pensions}$.

The Statements of Fiduciary Net Position report the financial position of the Plan at a given point in time, in this case, December 31. Over time, the increase or decrease in fiduciary net position serves as a useful indicator of the Plan's financial health.

The Statements of Changes in Fiduciary Net Position report additions to and deductions from the Plan during the calendar year. The formula here is: $\text{Additions} - \text{Deductions} = \text{Net Increase (Decrease) in Plan Fiduciary Net Position}$. The Statements of Changes in Fiduciary Net Position report activity occurring over a specific period of time, in this case, the year beginning January 1 and ending December 31.

The Notes to the Financial Statements provide additional information that is essential to a full understanding of the data provided in the Plan's financial statements.

The Required Supplementary Information following the Notes to the Financial Statements consists of the schedules of changes in net pension liability and related ratios, investment returns, contributions, and notes to schedule of contributions.

These statements and schedules are prepared in conformity with U.S. generally accepted accounting principles, including the new accounting and financial reporting requirements found in GASB Statement No. 67.

Assets and Liabilities – Fiduciary Net Position

Total assets are comprised of cash and cash equivalents; investments at fair value; and receivables, comprised of contributions due from plan members and investments sold but not yet received. Total Assets as of December 31, 2019 was \$358.99 million, a 16.2% increase of \$50.05 million from prior year.

Total liabilities are comprised of payables for benefits payments due, accrued employee payroll and accrued but unpaid compensated absences. Total liabilities as of December 31, 2019 was \$99,310 an increase of \$3,464 from prior year.

Fiduciary net position was the residual of the Plan's assets in excess of the Plan's liabilities as of the specific date, December 31, 2019 of the Statements of Fiduciary Net Position.

The fiduciary net position as a percentage of actuarial pension liability was 64.25% on December 31, 2019.

Assets and Liabilities – Fiduciary Net Position 2019

	2019	2018	Total \$ Change	Total % Change
Assets				
Cash and cash equivalents	3,982,274	8,021,407	(4,039,133)	-50.35%
Investments	354,497,946	300,249,157	54,248,789	18.07%
Receivables	611,839	763,485	(151,646)	-19.86%
Total Assets	359,092,059	309,034,049	50,058,010	16.20%
Liabilities				
Payables	4,663	596	4,067	682.79%
Accrued payroll	2,844	8,300	(5,456)	-65.73%
Accrued compensated absences	91,803	86,950	4,853	5.58%
Total Liabilities	99,310	95,846	3,464	3.61%
Fiduciary Net Position	358,992,749	308,938,203	50,054,546	16.20%

5 Year History Assets and Liabilities - Fiduciary Net Position

	2019	2018	2017	2016	2015
Assets					
Cash and cash equivalents	3,982,274	8,021,407	8,213,746	2,934,088	15,207,180
Investments	354,497,946	300,249,157	309,316,225	271,800,130	240,599,412
Receivables	611,839	763,485	791,665	688,513	1,151,029
Total Assets	359,092,059	309,034,049	318,321,636	275,422,731	256,957,621
Liabilities					
	0				
Payables	4,663	596	1,273	450	12,432
Accrued payroll	2,844	8,300	7,153	6,978	5,511
Accrued compensated absences	91,803	86,950	78,690	81,880	79,297
Total Liabilities	99,310	95,846	87,116	89,308	97,240
Fiduciary Net Position	358,992,749	308,938,203	318,234,520	275,333,423	256,860,381

Revenues - Additions to Plan Fiduciary Net Position

Revenue (Additions to the HCRS' fiduciary net position) includes contributions from active members, employers, non-employer entities, transfers in from other retirement systems and net investment income. For plan year, 2019 revenues totaled \$84.97 million, an increase of \$61.70 million from prior year.

Member contributions comprised of regular contributions and makeup/redeposit purchases of prior service, totaled \$8.42 million, an increase of \$319,667 from prior year. Member contributions generally increase annually due to salary increases and net gain from new members paying a higher percentage of salary replacing retiring members contributing at a lower percentage of salary. There were 338 new members enrolled in 2019. Withdrawals and transfers of active members totaled 258 comprised of 163 members, 2 member deaths and 93 new retirements. Net gain of 80 active members.

Required employer contributions were determined by the biennial actuarial valuation that established a funding schedule with the target date to reach full funding in 2033. Total employer contributions for plan year 2019 was \$24.29 million. Total required employer contributions were distributed to unit employers based on aggregate salary data as of September 30 of prior year. Employer contributions totaled \$24.29 million, an increase of \$1.7 million from prior year.

Non-employer contributions are comprised primarily of Commonwealth's COLA reimbursement for pre-1996 retirees but also includes worker's compensation offset settlements and recovery of 91A overearnings. The Commonwealth's COLA reimbursement decreases annually due to the declining population of pre-1996 retirees. Additions from worker's compensation offset settlements and recovery of 91A overearnings are variable from year to year. For the plan year 2019 non-employer contributions totaled \$163,506 a decrease of \$96,052 from prior year.

Transfers from other systems are comprised of transfers of member annuity savings accounts for service with other Massachusetts retirement systems and 3(8)(c) reimbursements of pension payments for retirees with service liabilities in other Massachusetts retirement systems. Transfers from other systems varies annually depending on an increase or a decrease of employees/retirees who have changed public employers. Transfers from other systems totaled \$1.96 million, a decrease of \$210,258 from the prior year.

The asset allocation of investments is well diversified among domestic and global fixed income, domestic and international equities, real estate, private debt and private equities. The Board has as its primary purpose to grow Plan assets at a rate sufficient to meet promised benefits to members while minimizing the risks associated with achieving that growth. For the plan year 2019 net investment earnings, comprised of the net change in fair value of investments and interest earned on investments minus investment expenses, was \$50.13 million, an increase of \$59.99 million from the prior year.

Revenues - Additions to Plan Fiduciary Net Position 2019

	2019	2018	Total \$ change	Total % change
Contributions				
Employer contributions	24,294,506	22,597,993	1,696,513	7.51%
Member contributions	8,422,814	8,103,147	319,667	3.94%
Non-employer entities	163,506	259,558	(96,052)	-37.01%
Transfer from other systems	1,959,926	2,170,184	(210,258)	-9.69%
Total Contributions	34,840,752	33,130,882	1,709,870	5.16%
Investment earnings				
Net increase(decrease) in fair value of investments	52,262,607	(7,646,331)	59,908,938	783.50%
Interest	34,988	16,299	18,689	114.66%
Gross investment earnings	52,297,595	(7,630,032)	59,927,627	785.42%
Less investment expenses	(2,168,313)	(2,226,111)	(57,798)	-2.60%
Net Investment Earnings	50,129,282	(9,856,14)	59,985,425	608.61%
Total Additions (Revenues)	84,970,034	23,274,739	61,695,295	265.07%

5 Year History – Contributions - Additions to Plan

	2019	2018	2017	2016	2015
Contributions					
Employer contributions	24,294,506	22,597,993	21,331,218	19,693,436	18,626,735
Member contributions	8,422,814	8,103,147	7,792,063	7,446,905	7,322,347
Non-employer entities	163,506	259,558	124,318	331,313	135,964
Transfer from other systems	1,959,926	2,170,184	1,618,180	1,268,799	1,247,378
Total Contributions	34,840,752	33,130,882	30,865,779	28,740,453	27,332,424
Investment earnings					
Net increase(decrease) in fair value of investments	52,262,607	(7,646,331)	45,207,890	20,818,249	943,203
Interest	34,988	16,299	31,443	22,284	0
Gross investment earnings	52,297,595	(7,630,032)	45,239,333	20,840,533	22,340
Less investment expenses	(2,168,313)	(2,226,111)	(1,881,955)	(1,804,554)	(965,543)
Net Investment Earnings	50,129,282	(9,856,143)	43,357,378	19,035,979	2,070,064
Total Additions (Revenues)	84,970,034	23,274,739	74,223,157	47,776,432	29,402,488

Expenses – Deductions to Plan Fiduciary Net Position

Deductions to HCRS' fiduciary net position include benefits paid, refund of contributions to terminated members, transfers to other retirement systems and administrative expenses. Total Deductions for 2019 totaled \$34.92 million, an increase of \$2.35 million (7.20%).

Benefits paid totaled \$29.70 million, an increase of \$1.45 million. For plan year 2019, there were 93 new retirees and 52 deaths, a net increase of 41 retirees. Cost of living adjustment was granted capped at 3% on the first \$13,000 (maximum increase of \$390).

For the plan year 2019 163 members terminated from the system by either withdrawal of contributions or transfer to other systems.

Refunds to members terminating employment and withdrawing contributions totaled \$1.27 million, an increase of \$732,632 from prior year. Refunds to withdrawing members include only the members' contributions and interest based on service credit forfeited. Employer contributions for withdrawing members are retained by the System and pension liability for withdrawing members is terminated.

Transfers to other systems of annuity savings accounts of former members and 3(8)(c) reimbursement of benefit payments to former members retired from other retirement systems totaled \$3.10 million, an increase of \$198,240 from prior year. Both employer contributions and pension liability for transferred members are retained by the System.

Administrative expenses totaled \$842,372, a decrease of \$37,398 or -4.25% from prior year.

Expenses – Deductions to Plan Fiduciary Net Position - 2019

	2019	2018	Total \$ change	Total % change
Benefits Paid	29,700,339	28,249,381	1,450,958	5.14%
Refunds to terminated members	1,271,210	538,578	732,632	136.03%
Transfers to other systems	3,101,567	2,903,327	198,240	6.83%
Administrative expenses	842,372	879,770	(37,398)	-4.25%
Total Deductions (Expenses)	34,915,488	32,571,056	2,344,432	7.20%

5 Year History Expenses – Deductions to Plan Fiduciary Net Position

	2019	2018	2017	2016	2015
Benefits Paid	29,700,339	28,249,381	26,616,377	24,973,457	23,410,439
Refunds to terminated members	1,271,210	538,578	911,881	741,840	946,870
Transfers to other systems	3,101,567	2,903,327	2,979,750	2,787,216	2,561,166
Administrative expenses	842,372	879,770	814,052	800,877	835,479
Total Deductions (Expenses)	34,915,488	32,571,056	31,322,060	29,303,390	27,753,954

Changes to Fiduciary Net Position – Summary

Changes in fiduciary net position as of December 31, 2019 was a net increase of \$50.05 million. Revenues increased by \$61.70 million and expenses increased by \$2.34 million. Net increase to Fiduciary Position was \$59.4 million.

Changes to Fiduciary Net Position – Summary 2019

	2019	2018	Total \$ change	Total % change
Total Additions (Revenues)	84,970,034	23,274,739	61,695,295	265.07%
Total Deductions (Expenses)	34,915,488	32,571,056	2,344,432	7.20%
Net Position Change	50,054,546	(9,296,317)	59,350,863	638.43%

5 Year History - Changes to Fiduciary Net Position

	2019	2018	2017	2016	2015
Total Additions (Revenues)	84,970,034	23,274,739	74,223,157	47,776,432	26,227,903
Total Deductions (Expenses)	34,915,488	32,571,056	31,322,060	29,303,390	27,753,954
Net Position Change	50,054,546	(9,296,317)	42,901,097	18,473,042	(1,526,051)

TOTAL FUND BALANCE AT FAIR VALUE

As of December 31, 2019, the Total Fund Balance at Fair Value was \$358.99 million, an increase of \$50.05 million (16.2%) from prior year. Increase was primarily due to net increase in investment earnings.

Total Fund Balance at Fair Value 2019

	2019	2018	Total \$ change	Total % change
Beginning Fund Balance	308,938,203	318,234,520	(9,296,317)	-2.92%
Ending Fund Balance	358,992,749	308,938,203	50,054,546	16.20%

5 Year History - Total Fund Balance at Fair Value

	2019	2018	2017	2016	2015
Beginning Fund Balance	308,938,203	318,234,520	275,333,423	256,860,381	258,386,432
Ending Fund Balance	358,992,749	308,938,203	318,234,520	275,333,423	256,860,381

OVERALL FINANCIAL POSITION

HCRS maintains a well-diversified portfolio of assets in domestic and global fixed income, domestic and international equities, real estate and alternative investments (private debt and private equity). The Board has as its primary purpose to grow Plan assets at a rate sufficient to meet promised benefits to members while minimizing the risks associated with achieving that growth. The Board maintains a relatively conservative asset allocation with an emphasis on protecting assets in down markets rather than capturing all up markets. The Board attempts to outperform actuarial assumptions to reduce the unfunded liability as soon as practicable. However, at no time is the Plan exposed to unreasonable risk levels.

In accordance with Massachusetts General Laws, Chapter 32, Section 22 (6a), the Plan performs actuarial valuations biennially and adopts a funding schedule to achieve a 100% funding level prior to the year 2040. The Board adopted the funding schedule with a full funding target date of 2033 and with long-term target of investment return rate of 7.45%.

As of December 31, 2019, the funded ratio for the Plan was to 64.25%.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31,

ASSETS	<u>2019</u>
Cash	<u>\$ 3,982,274</u>
Investments at fair value:	
Mutual funds	71,636,457
External investment pools	167,663,472
Unit investment trusts	90,757,942
Limited partnerships	24,440,075
Total investments at fair value	<u>354,497,946</u>
Receivables:	
Members receivable, net	611,839
Total receivables	<u>611,839</u>
TOTAL ASSETS	<u>359,092,059</u>
LIABILITIES	
Accounts payable	4,663
Accrued payroll	2,844
Accrued compensated absences	91,803
TOTAL LIABILITIES	<u>99,310</u>
NET POSITION	
Restricted for pension benefits	<u><u>\$ 358,992,749</u></u>

See accompanying independent auditors' report and management's notes to financial statements.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
YEAR ENDED DECEMBER 31,

ADDITIONS TO NET POSITION ATTRIBUTED TO	<u>2019</u>
Contributions:	
Employer	\$ 24,294,506
Plan member	8,422,814
Nonemployer entities	163,506
Transfers from other systems	<u>1,959,926</u>
Total contributions	<u>34,840,752</u>
Investment earnings	
Net increase (decrease) in fair value of investments	52,262,607
Interest	<u>34,988</u>
Total investment income	52,297,595
Less investment expenses	<u>(2,168,313)</u>
Net investment earnings	<u>50,129,282</u>
TOTAL ADDITIONS	<u>84,970,034</u>
DEDUCTIONS TO NET POSITION ATTRIBUTED TO	
Benefits paid	29,700,339
Refunds of contributions	1,271,210
Transfers to other systems	3,101,567
Administrative expenses	<u>842,372</u>
TOTAL DEDUCTIONS	<u>34,915,488</u>
NET INCREASE (DECREASE) IN NET POSITION	50,054,546
NET POSITION RESTRICTED FOR PENSIONS - BEGINNING	<u>308,938,203</u>
NET POSITION RESTRICTED FOR PENSIONS - ENDING	<u>\$ 358,992,749</u>

See accompanying independent auditors' report and management's notes to financial statements.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
 NOTES TO FINANCIAL STATEMENTS
 DECEMBER 31, 2019

NOTE 1 - DESCRIPTION OF PLAN

The following description of the Hampshire County Retirement System, a Massachusetts regional public employee pension plan, is provided for general information purposes only. Participants should refer to Chapter 32 of the Massachusetts General Laws for a more detailed description of the pension plan provisions.

General

The Hampshire County Retirement System (the Plan) is a cost-sharing, multiple-employer, defined benefit pension plan maintained to provide retirement, disability, and death benefits to all member unit employees and beneficiaries deemed eligible by the Retirement Board, with the exception of the school department employees who serve in a teaching capacity. The Plan has 37 participating employers. The Plan was established and is governed in accordance with Chapter 32 and Chapter 34B, Section 19 of the Massachusetts General Laws (M.G.L), and is further regulated by the Code of Massachusetts Regulations 840 CMR 1.00-27.00: Public Employee Retirement Administration (PERAC).

Administration of the Plan

The Plan is administered by a five person Board of Retirement consisting of the Chairperson who shall be appointed by the other four board members, a second member who shall be a member of the regional retirement board advisory council and is elected by the advisory council, a third and fourth member who shall be elected by the members in or retired from the service of the Plan, and a fifth member, who shall not be a member of the Plan, appointed by the other four board members.

Plan Amendments

The Plan did not adopt any significant plan amendments during 2019.

Plan Membership

Participation in the plan is required for nearly all employees who are regularly employed on a full-time basis. There are three classes of membership:

- Group 1: General employees, including clerical, administrative, technical, and all other employees not otherwise classified.
- Group 2: Certain specified hazardous duty positions.
- Group 4: Police officers, firefighters, and other specified hazardous positions.

At December 31, 2019, Plan membership consisted of the following:

Group	Inactive members entitled to benefits but not yet receiving benefits		Active Members	Total
	Inactive members receiving benefits			
Group 1	1,152	579	1,663	3,394
Group 2 & 4	233	128	359	720
	<u>1,385</u>	<u>707</u>	<u>2,022</u>	<u>4,114</u>

HAMPSHIRE COUNTY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2019

NOTE 1 - DESCRIPTION OF PLAN (CONTINUED)

Benefits Provided

Pursuant to M.G.L. Chapter 32, members are eligible to receive benefits once they have met one of the conditions below:

Tier 1 (Membership prior to April 2, 2012):

- Completion of 20 years of service, or
- Reach age 55 if hired prior to 1978, or
- Reach age 55 with 10 years of service, if hired after 1978, and if classified in Group 1 and 2, or
- Disabled or death

Tier 2 (Membership on or after April 2, 2012):

- If classified as Group 1, attain age 60 with 10 years of creditable service, or
- If classified as Group 2, attain age 55 with 10 years creditable service, or
- If classified as Group 4, attain age 55, or
- Disabled or death

The annual amount of a member's retirement allowance is calculated as the member's highest 3-year (5-year for members hired after April 2, 2012) average annual rate of regular compensation multiplied by the member's creditable service and multiplied by a benefit rate. The benefit rate is based upon a member's age at retirement and group classification. The annual retirement allowance may not exceed 80% of the member's highest 3-year (or 5-year) average annual rate of regular compensation.

An annual cost of living adjustment may be voted on and granted by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3% on the base amount of the first \$13,000 of a member's benefit.

Contributions

The contributions of plan members and participating employers are governed by Chapter 32 of M.G.L. Member contribution rates vary depending on the most recent date of membership as follows:

Prior to 1975:	5% of compensation
1975 - 1983:	7% of compensation
1984 - 6/30/19:	8% of compensation
7/1/96 - present:	9% of compensation
1979 to present:	an additional 2% of compensation in excess of \$30,000
Group 1 members hired on or after April 2, 2012:	6% of compensation with 30 or more years of creditable service

Participating employer contributions are set by annual appropriations as determined by the Plan's actuary. For the year ended December 31, 2019, employers were required to contribute \$24,294,506. In addition to member and employer contributions, the Commonwealth of Massachusetts currently reimburses the Plan for cost of living adjustments granted to members after 1981 and prior to July 1, 1998.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2019

NOTE 2 - SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Accounting

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

Investment Valuation and Income Recognition

Investments are reported at fair value. Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

Interest income is recorded on the accrual basis. Net appreciation (depreciation) includes the Plan's gains and losses on investments bought, sold, and held.

Payments of Benefits

Benefits are recorded when paid.

NOTE 3 - RISKS AND UNCERTAINTIES

Nature of Operations

The operations of the Plan are subject to the M.G.L and to the administrative directives, rules and regulations of state regulatory agencies, including, but not limited to the Public Employee Retirement Administration Commission (PERAC). Such laws and administrative directives, rules and regulations are subject to change by an act of Legislature and any administrative change mandated by PERAC. Such changes may occur with little notice or inadequate funding to pay for the related costs, including the additional administrative burden, to comply with a change.

Deposit and Investment Risk

Deposits

Custodial credit risk for deposits is the risk that in an event of a bank failure, deposits may not be recovered. The Plan does not have a deposit policy to manage custodial credit risk. At December 31, 2019, the Plan held deposits of \$4,214,380 at a local bank. The Federal Deposit Insurance Corporation (FDIC) insures \$250,000 of that balance. The remaining balance was collateralized by an irrevocable standby letter of credit.

Investments

The Plan invests in various financial instruments. Financial instruments are exposed to various risks such as credit risk, custodial credit risk, concentrations of credit risk, interest rate risk, and foreign currency risk. The Plan does not have an investment policy to manage these risks. Due to the level of risk associated with certain financial instruments, it is at least reasonably possible that changes in the values of financial instruments will occur in the near term and that such changes could materially affect the amounts reported in the statement of fiduciary net position.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2019

NOTE 3 - RISKS AND UNCERTAINTIES (CONTINUED)

a). Custodial Credit Risk. For an investment, custodial credit risk is the risk that, in the event of the failure of a counterparty, the Plan will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. The Plan has \$90,757,942 in unit investment trusts that are held by the trust's agent.

b). Credit Risk. Credit risk exists when there is a possibility the issuer or other counterparty to an investment may be unable to fulfill its obligations. The Plan's investments as of December 31, 2019, if rated, are presented below using the Standard and Poor's rating scale:

Investment Type	Fair Value	AAA	AA	A	BBB	BB	B	Not Rated
U.S. Treasury notes, bonds, municipal securities	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
External Investment Pools	167,663,472	-	-	-	-	-	-	167,663,472
Total	\$ 167,663,472	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 167,663,472

c). Concentration of Credit Risk. The following investments represent 5% or more of total investments:

Investment	
Massachusetts S&P 500 Pooled Index Fund	\$ 49,001,619
International Equity Fund	26,738,187

d). Interest Rate Risk. Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The Plan's exposure to interest rate risk is presented below at December 31, 2019:

Investment Type	Fair Value	< 1 yr	1 to 5 yrs	6 to 10 yrs	> 10 yrs	Unknown
Mutual Funds	\$ 13,622,063	\$ -	\$ 13,622,063	\$ -	\$ -	\$ -
External Investment Pools	74,050,851	-	-	-	-	74,050,851
Total	\$ 87,672,914	\$ -	\$ 13,622,063	\$ -	\$ -	\$ 74,050,851

e). Foreign Currency Risk. Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment or deposit. The Plan's exposure to foreign currency risk is presented below at December 31, 2019:

Investment:	
Colchester Global Bond Fund (various currencies)	\$ 9,254,495
Colchester Local Markets Debt Fund (various currencies)	21,604,376
Total	<u>\$ 30,858,871</u>

Estimates

The preparation of financial statements in conformity with generally accepted accounting principles requires the plan administrator to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results may differ from those estimates.

Significant Estimates

None of the estimates used in preparing the financial statements were significant.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2019

NOTE 4 - INVESTMENTS

Investment policy. The provisions of M.G.L Chapter 32, section 23(2) generally govern the investment practices of the system. The Board establishes the Investment Policy and Asset Allocation of the Plan. The Board retains an investment consultant to advise them on developing and implementing the Policy, and to closely monitor the individual performance of investment managers and the performance of the overall investment strategy. Investment policy guidelines are reviewed annually by the Board after consideration of the advice and recommendation of the investment consultant. All modifications of investment policy guidelines are in writing and signed by each Board member. The following was the Retirement Board's adopted asset allocation policy as of December 31, 2019:

Asset Class	Target Allocation
Cash	2.0%
Domestic Large Cap Equities	13.5%
Domestic Mid Cap Equities	2.0%
Domestic Small Cap Equities	2.0%
International Equities (Unhedged)	14.0%
Emerging Market Equities	5.0%
Total Equities	36.5%
Domestic Core Bonds	25.0%
Bank Loans	3.0%
High Yield Bonds	3.0%
Global Bond (Unhedged)	3.0%
Emerging Market Debt (Local Currency)	5.0%
Total Fixed Income	39.0%
Real Estate	12.0%
Private Debt	1.5%
Private Equity	9.0%
Total Alternative Investments	22.5%
Total	100.0%

There were no significant investment policy changes during the reporting period.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2019

NOTE 4 - INVESTMENTS (CONTINUED)

Investments are reported at their fair value at year end. Although the Plan believes its valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different fair value measurement at year end.

The fair value measurement establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy has three levels which are described below.

Level 1 Fair Value Measurements

The fair value of commingled domestic and international investments is based on quoted prices of the funds held by the Plan at year-end.

Level 2 Fair Value Measurements

Investments in certain preferred stocks are valued on the market approach using the quoted market price of the issuer's unrestricted common stock less an appropriate discount.

Level 3 Fair Value Measurements

The fair value of certain investments is not actively traded and significant other observable inputs are not available. In this case, management decides what the best valuation technique to use is.

The investments of the Plan consisted of the following as of:

Investment Type	Fair Value	December 31, 2019		
		Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant un- observable inputs (Level 3)
Investments measured by input level:				
Mutual funds	\$ 71,636,457	\$ 71,636,457	\$ -	\$ -
Limited partnerships	24,440,075	-	-	24,440,075
Total investments by input level	<u>96,076,532</u>	<u>71,636,457</u>	<u>-</u>	<u>24,440,075</u>
Investments measured by NAV:				
External investment pools	167,663,472	n/a	n/a	n/a
Unit investment trusts	90,757,942	n/a	n/a	n/a
Total investments by NAV	<u>258,421,414</u>	<u>-</u>	<u>-</u>	<u>-</u>
Total investments	<u>\$ 354,497,946</u>	<u>\$ 71,636,457</u>	<u>\$ -</u>	<u>\$ 24,440,075</u>

HAMPSHIRE COUNTY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2019

NOTE 4 - INVESTMENTS (CONTINUED)

The following table presents the unfunded commitments, redemption terms, and fair value of the investments measured at NAV:

	Investments measured at NAV			
	Fair Value	Unfunded Commitments	Redemption Frequency (if currently eligible)	Redemption Notice Period
External investment pools	\$ 167,663,472	\$ 24,625,469	Monthly	n/a
Unit investment trusts	90,757,942	n/a	Daily-Monthly	n/a
Total	<u>\$ 258,421,414</u>	<u>\$ 24,625,469</u>		

External Investment Pools. This type includes investment in the Pension Reserves Investment Trust (PRIT) fund that invests in 1). private equity and alternative debt, with managers representing various investment styles and concentrating on a variety of industries and locations 2). opportunities that offer long-term growth of capital, primarily through a diversified portfolio of non-US equity securities 3). domestic high quality, and substantially leased properties typically in the following property types: apartment, office, retail, industrial and R& D office 4). bonds, short-term fixed income, long duration treasury, and inflation-linked bonds. The PRIT fund is an external investment pool, as defined by GASB, and it is not registered with the Securities and Exchange Commission, but is subject to oversight by the Pension Reserves Investment Management Board (the PRIM Board). The PRIT fund issues separate audited financial statements that may be obtained on their website. The fair value of the position in the pool is the same as the value of pool shares.

Unit Investment Trusts. This type includes investments in three private investment trusts that invest primarily in certain stocks contained in the S&P 500 Index, S&P Small-Cap 600 Index, and S&P MidCap 400 Index. This type also includes investments in an investment trust that offers long-term growth of capital, primarily through a diversified portfolio of non-US equity securities.

Concentrations. The following investments represent 5% or more of fiduciary net position:

MFS International Equity Fund	\$ 27,155,523
Massachusetts S&P 500 Pooled Index Fund	49,001,619
International Equity Fund	26,738,187
PRIM Emerging Markets	21,782,863
PRIM Core Real Estate	47,818,694
Colchester Local Markets Debt	21,604,376
PRIM Core Fixed Income	74,050,851

Rate of return. For the year ended December 31, 2019, the annual money-weighted rate of return on pension plan investments, net of pension plan investment expense, was 16.30%. This money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changed amounts actually invested.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
 NOTES TO FINANCIAL STATEMENTS
 DECEMBER 31, 2019

NOTE 5 - PARTICIPANT CONTRIBUTIONS RECEIVABLE

Participant contributions receivable are stated at the amount the administrator expects to collect from balances outstanding at year-end. Balances that are still outstanding after the administrator has used reasonable collection efforts are written off through a charge to the valuation allowance and a credit to participant contributions receivable. The allowance for uncollectible accounts was estimated to be \$0 at December 31, 2019.

NOTE 6 - ACCRUED COMPENSATED ABSENCES

Summarized below are the accrued vacation and sick leave liabilities at December 31, 2019:

	Balance 1/1/19	Additions	Deletions	Balance 12/31/2019	Current Portion
Accrued compensated absences	\$ 86,950	\$ 34,410	\$ 29,557	\$ 91,803	\$ -
Totals	<u>\$ 86,950</u>	<u>\$ 34,410</u>	<u>\$ 29,557</u>	<u>\$ 91,803</u>	<u>\$ -</u>

NOTE 7 - NET PENSION LIABILITY OF THE PARTICIPATING EMPLOYERS

The net pension liability is the actuarial total liability less the plan fiduciary net position. The components of the net pension liability of the participating employers at December 31, 2019, were as follows:

	<u>2019</u>
Total pension liability	<u>\$ 558,763,173</u>
Plan fiduciary net position	<u>358,992,749</u>
Employer's net pension liability (asset)	<u>\$ 199,770,424</u>
Plan fiduciary net position as a % of total pension liability	64.2%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of January 1, 2020, using the following actuarial assumptions, applied to all prior periods included in the measurement:

Inflation	2.4 %
Salary increases	Group 1: 6% - 4.25%, based on service Group 4: 7% - 4.75%, based on service
Investment rate of return	7.15% of pension plan investment, net of expense, including inflation

HAMPSHIRE COUNTY RETIREMENT SYSTEM
 NOTES TO FINANCIAL STATEMENTS
 DECEMBER 31, 2019

NOTE 7 - NET PENSION LIABILITY OF THE PARTICIPATING EMPLOYERS (CONTINUED)

Mortality rates were based on the RP-2014 Blue Collar Mortality Table with full generational mortality improvement using Scale MP-2018. For disabled lives, the mortality rates were based on the RP-2014 Blue Collar Mortality Table set forward one year with full generational mortality improvement using Scale MP-2018. Mortality assumptions reflect the PERAC local system retiree mortality study completed in 2019.

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 December 31, 2019 (see the discussion of the pension plan's investment policy) are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
Large Cap Equities	15.5%	5.00%
Small/Mid Cap Equities	4.5%	5.20%
International Equities (Unhedged)	16.5%	5.20%
Emerging International Equities	6.0%	7.10%
Private Equity	10.0%	8.80%
Core Fixed Income	20.0%	0.20%
High-Yield Bonds	3.0%	3.40%
Bank Loans	3.0%	2.70%
EMD (Local Currency)	6.0%	3.20%
Private Debt	1.5%	5.40%
Real Estate	12.0%	3.30%
Cash	2.0%	-0.60%
Total	100.0%	

Discount rate. The discount rate used to measure the total pension liability was 7.15%. The discount rate at the Plan's prior fiscal year end was 7.45%. The projection of cash flows used to determine the discount rate assumed that contributions from plan members will be made at the current contribution rate and that contributions from participating employers will be made in accordance with Sections 22D and 22F of Chapter 32 of the Massachusetts General Laws. 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. The municipal bond rate used was 2.74%, based on the December 2019 Bond Buyer Index as published by the Federal Reserve.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
 NOTES TO FINANCIAL STATEMENTS
 DECEMBER 31, 2019

NOTE 7 - NET PENSION LIABILITY OF THE PARTICIPATING EMPLOYERS (CONTINUED)

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability of the participating employers calculated using the discount rate of 7.15%, as well as what the participating employers' net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.15%) or 1-percentage-point higher (8.15%) than the current rate:

	1% Decrease (6.15%)	Current Discount Rate (7.15%)	1% Increase (8.15%)
Employer's net pension liability (asset)	<u>\$264,415,062</u>	<u>\$ 199,770,424</u>	<u>\$ 145,142,018</u>

NOTE 8 – LEGALLY REQUIRED FUNDS

The balances in the Plan's legally required funds per M.G.L. Chapter 32, Section 22 at December 31, 2019:

	<u>2019</u>	<u>Purpose</u>
Annuity Savings Fund	\$ 84,012,090	Active members' contribution balance
Special Fund for Military Service Credit	64,939	Members' contribution while on military leave
Annuity Reserve Fund	26,885,385	Retired members' contribution account
Pension Fund	12,492,759	To fund current pension benefits
Pension Reserve Fund	235,537,576	To fund future pension benefits
	<u>\$358,992,749</u>	

NOTE 9 – COMMITMENTS

As of December 31, 2019, the Plan had unfunded capital commitments on its limited partnerships totaling \$3,657,118.

NOTE 10 - TAX STATUS

The Plan is a qualified plan under the Internal Revenue Code of 1986, as amended and, therefore, is exempt from federal income taxes. The Plan administrator believes the Plan is designed and is currently being operated in substantial compliance with the applicable requirements of the Internal Revenues Code and will retain its status as a qualified plan.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2019

NOTE 11 - OPERATING LEASE

The Plan leases office space. Future minimum annual rental payments as of December 31, 2019 are as follows:

2020	\$45,265
2021	\$46,069
2022	\$46,866
2023	\$47,665
2024	\$20,000

Operating lease rent expense totaled \$44,796 for the year ended December 31, 2019.

NOTE 12 - MANAGEMENT REVIEW

Management has reviewed subsequent events as of January 05, 2021, the date the financial statements were available to be issued. At that time, there were no material subsequent events.

**HAMPSHIRE COUNTY RETIREMENT SYSTEM
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF CHANGES IN NET PENSION LIABILITY - LAST TEN FISCAL YEARS
DECEMBER 31, 2019**

	2019	2018	2017	2016	2015
Total pension liability					
Service cost	\$ 13,282,271	\$ 12,771,414	\$ 11,029,438	\$ 10,605,229	\$ 10,269,070
Interest	38,884,736	37,396,643	36,888,260	34,627,268	34,842,587
Changes of benefit terms	-	-	-	-	-
Differences between expected and actual experience	(6,620,290)	-	(434,874)	(4,348,736)	-
Changes of assumptions	20,488,858	-	(9,996,849)	16,610,092	-
Benefit payments, including refunds	(31,865,798)	(29,543,223)	(28,662,890)	(26,880,118)	(25,512,793)
Net change in total pension liability	<u>\$ 34,169,777</u>	<u>\$ 20,624,834</u>	<u>\$ 8,823,085</u>	<u>\$ 30,613,735</u>	<u>\$ 19,598,864</u>
Total pension liability - beginning	524,593,396	503,968,562	495,145,477	464,531,742	444,932,878
Total pension liability - ending	<u>\$ 558,763,173</u>	<u>\$ 524,593,396</u>	<u>\$ 503,968,562</u>	<u>\$ 495,145,477</u>	<u>\$ 464,531,742</u>
Fiduciary net position					
Contributions - employer	\$ 24,294,506	\$ 22,597,993	\$ 21,331,218	\$ 19,693,436	\$ 18,626,735
Contributions - member	8,422,814	8,103,147	7,792,063	7,446,905	7,322,347
Contributions - nonemployer	163,506	259,558	124,318	331,313	135,964
Transfers from other systems	1,959,926	2,170,184	1,618,180	1,268,799	1,247,378
Net investment income	50,129,282	(9,856,143)	43,357,379	19,035,979	(1,104,522)
Benefits paid	(29,700,339)	(28,249,381)	(26,616,377)	(24,973,457)	(23,410,439)
Refunds of contributions	(1,271,210)	(538,578)	(911,881)	(741,840)	(946,870)
Transfers to other systems	(3,101,567)	(2,903,327)	(2,979,750)	(2,787,216)	(2,561,166)
Administrative expenses	(842,372)	(879,770)	(814,052)	(800,877)	(835,479)
Net change in fiduciary net position	<u>\$ 50,054,546</u>	<u>\$ (9,296,317)</u>	<u>\$ 42,901,098</u>	<u>\$ 18,473,042</u>	<u>\$ (1,526,052)</u>
Fiduciary net position - beginning	308,938,203	318,234,520	275,333,422	256,860,381	258,386,433
Fiduciary net position - ending	<u>\$ 358,992,749</u>	<u>\$ 308,938,203</u>	<u>\$ 318,234,520</u>	<u>\$ 275,333,423</u>	<u>\$ 256,860,381</u>
Net pension liability (asset) - ending	<u>\$ 199,770,424</u>	<u>\$ 215,655,193</u>	<u>\$ 185,734,042</u>	<u>\$ 219,812,054</u>	<u>\$ 207,671,361</u>

	2014	2013	2012	2011	2010
Total pension liability					
Service cost	\$ 9,850,427	*	*	*	*
Interest	33,371,689	*	*	*	*
Changes of benefit terms	-	*	*	*	*
Differences between expected and actual experience	-	*	*	*	*
Changes of assumptions	-	*	*	*	*
Benefit payments, including refunds	(24,412,587)	*	*	*	*
Net change in total pension liability	<u>\$ 18,809,529</u>	<u>*</u>	<u>*</u>	<u>*</u>	<u>*</u>
Total pension liability - beginning	426,123,349	*	*	*	*
Total pension liability - ending	<u>\$ 444,932,878</u>	<u>*</u>	<u>*</u>	<u>*</u>	<u>*</u>
Fiduciary net position					
Contributions - employer	\$ 17,436,197	*	*	*	*
Contributions - member	7,177,431	*	*	*	*
Contributions - nonemployer	227,088	*	*	*	*
Transfers from other systems	1,067,545	*	*	*	*
Net investment income	11,959,239	*	*	*	*
Benefits paid	(22,164,495)	*	*	*	*
Refunds of contributions	(801,315)	*	*	*	*
Transfers to other systems	(2,382,307)	*	*	*	*
Administrative expenses	(754,997)	*	*	*	*
Net change in fiduciary net position	<u>\$ 11,764,386</u>	<u>*</u>	<u>*</u>	<u>*</u>	<u>*</u>
Fiduciary net position - beginning	246,622,046	*	*	*	*
Fiduciary net position - ending	<u>\$ 258,386,432</u>	<u>*</u>	<u>*</u>	<u>*</u>	<u>*</u>
Net pension liability (asset) - ending	<u>\$ 186,546,446</u>	<u>*</u>	<u>*</u>	<u>*</u>	<u>*</u>

* – Information not available

See accompanying independent auditors' report and management's notes to required supplementary information.

**HAMPSHIRE COUNTY RETIREMENT SYSTEM
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF NET PENSION LIABILITY - LAST TEN FISCAL YEARS
DECEMBER 31, 2019**

	2019	2018	2017	2016	2015
Total pension liability	\$ 558,763,173	\$ 524,593,396	\$ 503,968,562	\$ 495,145,477	\$ 464,531,742
Fiduciary net position	358,992,749	308,938,203	318,234,520	275,333,423	256,860,381
Net pension liability (asset)	<u>\$ 199,770,424</u>	<u>\$ 215,655,193</u>	<u>\$ 185,734,042</u>	<u>\$ 219,812,054</u>	<u>\$ 207,671,361</u>

Fiduciary net position as a percentage of the total pension liability	64.2%	58.9%	63.1%	55.6%	55.3%
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Covered payroll	\$ 85,426,619	\$ 84,192,999	\$ 76,767,518	\$ 78,914,925	\$ 80,914,245
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Net pension liability (asset) as a percentage of covered payroll	233.9%	256.1%	241.9%	278.5%	256.7%
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	2014	2013	2012	2011	2010
Total pension liability	\$ 444,932,878	*	*	*	*
Fiduciary net position	258,386,432	*	*	*	*
Net pension liability (asset)	<u>\$ 186,546,446</u>	<u>*</u>	<u>*</u>	<u>*</u>	<u>*</u>

Fiduciary net position as a percentage of the total pension liability	58.1%	*	*	*	*
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Covered payroll	\$ 77,139,934	*	*	*	*
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Net pension liability (asset) as a percentage of covered payroll	241.8%	*	*	*	*
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* – Information not available

See accompanying independent auditors' report and management's notes to required supplementary information.

**HAMPSHIRE COUNTY RETIREMENT SYSTEM
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF CONTRIBUTIONS - LAST TEN FISCAL YEARS
DECEMBER 31, 2019**

	2019	2018	2017	2016	2015
Actuarially determined contribution	\$ 24,294,506	\$ 22,597,993	\$ 21,331,218	\$ 19,693,436	\$ 18,620,753
Contributions in relation to the actuarially determined contribution	24,294,506	22,597,993	21,331,218	19,693,436	18,620,753
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered payroll	\$ 85,426,619	\$ 84,192,999	\$ 76,767,518	\$ 78,914,925	\$ 80,914,245
Contributions as a percentage of covered payroll	28.4%	26.8%	27.8%	25.0%	23.0%

	2014	2013	2012	2011	2010
Actuarially determined contribution	\$ 17,349,877	*	*	*	*
Contributions in relation to the actuarially determined contribution	17,349,877	*	*	*	*
Contribution deficiency (excess)	<u>\$ -</u>	<u>*</u>	<u>*</u>	<u>*</u>	<u>*</u>
Covered payroll	\$ 79,029,000	*	*	*	*
Contributions as a percentage of covered payroll	22.0%	*	*	*	*

* – Information not available

See accompanying independent auditors' report and management's notes to required supplementary information.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF INVESTMENT RETURNS - LAST TEN FISCAL YEARS
DECEMBER 31, 2019

	2019	2018	2017	2016	2015
Annual money-weighted rate of return, net of investment expenses	16.30%	-3.02%	15.77%	7.43%	-0.68%

	2014	2013	2012	2011	2010
Annual money-weighted rate of return, net of investment expenses	4.84%	*	*	*	*

* – Information not available

See accompanying independent auditors' report and management's notes to required supplementary information.

HAMPSHIRE COUNTY RETIREMENT SYSTEM
NOTES TO REQUIRED SUPPLEMENTARY INFORMATION
DECEMBER 31, 2019

NOTE 1 – METHODS AND ASSUMPTIONS USED IN CALCULATIONS OF ACTUARIALLY DETERMINED CONTRIBUTIONS

The actuarially determined contribution rates in the schedule of contributions were calculated as of July 1. The following actuarial methods and assumptions were used to determine contribution rates reported in that schedule:

Actuarial cost method:	Entry Age Normal
Amortization method:	Increasing dollar amount at 4.00%
Remaining amortization period:	14 years
Asset valuation method:	The Actuarial Value of Assets is the market value of assets as of the valuation date reduced by the sum of: a). 80% of gains & losses of the prior year, b). 60% of gains & losses of the second prior year, c). 40% of gains & losses of the third prior year, d). 20% of gains & losses of the fourth prior year. Investment gains and losses are determined by the excess or deficiency of the expected return over the actual return on the market value. The actuarial valuation of assets is further constrained to be not less than 90% or more than 110% of market value.
Inflation:	2.4% per year
Salary increases:	Group 1: 6% - 4.25%, based on service Group 4: 7% - 4.75%, based on service
Payroll growth:	3.5% per year
Investment rate of return:	7.15%, net of pension plan investment expense including inflation

NOTE 2 – FACTORS THAT SIGNIFICANTLY AFFECT TRENDS IN THE AMOUNTS REPORTED ON THE SCHEDULES

Actuarial assumptions and methods used that changed since the last valuation, include decreasing the investment return rate to 7.15% from 7.45%, decreasing the net 3(8)(c) transfers assumption, and updating the mortality and mortality improvement rates. The change in assumptions resulted in a net increase in the unfunded actuarial accrued liability of \$20,488,878 and an increase in the employer normal cost of \$628,351.