

BROCKTON CONTRIBUTORY RETIREMENT SYSTEM

**FINANCIAL STATEMENTS AND
REQUIRED SUPPLEMENTARY INFORMATION**

YEAR ENDED DECEMBER 31, 2018



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**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
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YEAR ENDED DECEMBER 31, 2018**

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INDEPENDENT AUDITORS' REPORT

Honorable Retirement Board
Brockton Contributory Retirement System
Brockton, Massachusetts

Report on the Financial Statements

We have audited the accompanying financial statements of the Brockton Contributory Retirement System (the System), as of and for the year ended December 31, 2018, 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 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 System as of December 31, 2018, and the change 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 (located on pages 3 through 6), schedule of changes in employer net pension liability and related ratios, schedule of employer contributions, and schedule of investment returns (located on pages 20 and 21) be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audit of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated August 14, 2019 on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the System's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.



CliftonLarsonAllen LLP

Boston, Massachusetts
August 14, 2019

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
MANAGEMENT'S DISCUSSION AND ANALYSIS
DECEMBER 31, 2018**

As management of the Brockton Contributory Retirement System (the System), we offer readers of these financial statements this narrative overview and analysis of the System's financial activities for the year ended December 31, 2018.

The management's discussion and analysis (MD&A) is presented in the following sections:

1. Financial Highlights
2. Overview of the Financial Statements
3. Financial Statement Analysis

Please refer to the audited *Financial Statements* when reading the MD&A.

Financial Highlights

The System's funding objective is to meet long-term benefit obligations through contributions and investment income. As of January 1, 2018, the latest actuarial valuation, the funded ratio was 62.4% based on the actuarial value of assets at that date. As of December 31, 2018, the plan fiduciary net position was 56.71% of the total pension liability.

The System's net position decreased by \$32,487,117, or 7.77%, when compared to the prior year's net position. Net position is the residual of the System's assets in excess of the System's liabilities as of the statement date. The System's assets are restricted to meet future benefit payments.

Overview of the Financial Statements

The financial statements are comprised of a statement of fiduciary net position, statement of changes in fiduciary net position, notes to financial statements, and required supplementary information.

The **statement of fiduciary net position** presents information on the System's assets and liabilities and the resulting net position restricted for pensions. This is calculated using the following formula: Assets – Liabilities = Net Position restricted for pensions. This statement reflects the System's investments at fair value, as well as cash, receivables and other assets and liabilities. The statement of fiduciary net position reports the net position of the System at December 31, 2018. Over time, the increase or decrease in net position serves as a useful indicator of the System's financial health.

The **statement of changes in fiduciary net position** presents information showing how the System's net position changed during the year ended December 31, 2018. It reflects contributions by its individual members and participating employers along with deductions for retirement benefits, refunds, withdrawals, and administrative expenses. Investment income during the period is also presented showing income from investing activities.

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

The **required supplementary information** includes this management's discussion and analysis, a schedule of changes in employer net pension liability and related ratios, a schedule of employer contributions and a schedule of investment returns.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
MANAGEMENT'S DISCUSSION AND ANALYSIS
DECEMBER 31, 2018**

Financial Statement Analysis

The System's total assets as of December 31, 2018 were \$385,612,747, and were comprised of cash and cash equivalents, investments, accrued interest and dividends, receivables, and other assets.

Total liabilities as of December 31, 2018 were \$21,222, and represented amounts owed for accounts payable.

The following tables present current and prior year data on the System's financial statements.

Fiduciary Net Position

As noted earlier, net position may serve over time as a useful indicator of a government's financial position. The System's net position was \$385,591,525 at the close of the year and is summarized as follows:

	<u>2018</u>	<u>2017</u>
ASSETS		
Cash and Cash Equivalents	\$ 13,066,487	\$ 12,026,636
Investments	372,241,835	405,742,169
Receivables and Other Assets	304,425	330,986
Total Assets	<u>385,612,747</u>	<u>418,099,791</u>
 LIABILITIES		
Accounts Payable	<u>21,222</u>	<u>21,149</u>
Total Liabilities	<u>21,222</u>	<u>21,149</u>
 NET POSITION		
Net Position Restricted for Pensions	<u><u>\$ 385,591,525</u></u>	<u><u>\$ 418,078,642</u></u>

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
MANAGEMENT'S DISCUSSION AND ANALYSIS
DECEMBER 31, 2018**

Financial Statement Analysis (Continued)

Changes in Fiduciary Net Position

For the year ended December 31, 2018, the System's total fiduciary net position decreased by \$32,487,117. In the prior year, fiduciary net position increased by \$46,664,525. These amounts are summarized as follows:

	<u>2018</u>	<u>2017</u>
ADDITIONS		
Contributions:		
Employer	\$ 26,029,652	\$ 25,014,425
Plan Members	9,578,961	9,184,633
Net Investment Income:		
Net Realized and Unrealized Gains (Loss)	(30,988,809)	46,384,062
Interest and Dividends	10,141,382	10,943,739
Less: Investment Expense	(2,770,990)	(2,241,521)
Net Investment Income (Loss)	<u>(23,618,417)</u>	<u>55,086,280</u>
Total Additions	11,990,196	89,285,338
DEDUCTIONS		
Retirement Benefits, Refunds, and Reimbursements	43,801,798	41,835,507
Administration	675,515	785,306
Total Deductions	<u>44,477,313</u>	<u>42,620,813</u>
CHANGE IN PLAN NET POSITION	(32,487,117)	46,664,525
Plan Net Position - Beginning of Year	<u>418,078,642</u>	<u>371,414,117</u>
PLAN NET POSITION - END OF YEAR	<u><u>\$ 385,591,525</u></u>	<u><u>\$ 418,078,642</u></u>

Additions to Fiduciary Net Position

The amount needed to finance benefits is accumulated through the collection of employer and employee contributions, and net investment income (loss). These additions resulted in an increase to net position totaling \$11,958,189. Employer contributions, and plan member contributions increased by \$1,409,555, in 2018, when compared to the prior year. The System had a net investment loss of \$23,618,417 in 2018, compared to a net investment gain of \$55,086,280 in 2017, due to the condition of the financial markets.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
MANAGEMENT'S DISCUSSION AND ANALYSIS
DECEMBER 31, 2018**

Financial Statement Analysis (Continued)

Deductions from Fiduciary Net Position

The primary deductions of the System include the payment of pension benefits to participants and beneficiaries, refunds of contributions, and the costs of administering the System. Total deductions were \$44,477,313 during the current year versus \$42,620,813 in the previous year. The payment of pension benefits, refunds, and reimbursements increased by \$1,966,291, or 4.70%, over the previous year.

Requests for Information

This financial report is designed to provide the Board, our membership, taxpayers, investors, and creditors with a general overview of the System's financial results and to demonstrate the System's accountability for the funding it receives. If you have any questions about this report or need additional financial information, contact the Executive Director at 1322 Belmont Street, Suite 101, Brockton, Massachusetts, 02301.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
STATEMENT OF FIDUCIARY NET POSITION
DECEMBER 31, 2018**

ASSETS

Cash and Cash Equivalents	\$ 13,066,487
Investments:	
Fixed Income Mutual Funds	95,431,642
Equities and Equity Mutual Funds	206,933,556
Real Estate Funds	21,896,245
Private Equity Funds	34,750,189
Structured Credit Funds	13,230,203
Total Investments	372,241,835
Accrued Interest and Dividends	134,189
Receivables:	
Member Deductions	10,011
Other	159,309
Total Receivables	169,320
Other Assets	916
Total Assets	385,612,747

LIABILITIES

Accounts Payable	21,222
Total Liabilities	21,222

FIDUCIARY NET POSITION

Net Position Restricted for Pensions	\$ 385,591,525
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See accompanying Notes to Financial Statements.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
YEAR ENDED DECEMBER 31, 2018**

ADDITIONS

Contributions:	
Employer	\$ 26,029,652
Plan Members	<u>9,578,961</u>
Total Contributions	35,608,613
Net Investment Income:	
Net Depreciation in Fair Value of Investments	(30,988,809)
Interest and Dividends	<u>10,141,382</u>
Total Investment Income	(20,847,427)
Less: Investment Fees	<u>(2,770,990)</u>
Net Investment Income	<u>(23,618,417)</u>
Total Additions	11,990,196

DEDUCTIONS

Retirement Benefits and Refunds	43,801,798
Administration	<u>675,515</u>
Total Deductions	<u>44,477,313</u>

CHANGE IN NET POSITION

(32,487,117)

Net Position Restricted for Pensions - Beginning of Year

418,078,642

NET POSITION RESTRICTED FOR PENSIONS - END OF YEAR

\$ 385,591,525

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2018**

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

General

The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America. The Governmental Accounting Standards Board (GASB) is the standard-setting body for establishing governmental accounting and financial reporting principles. The significant accounting policies are described herein.

Reporting Entity

The Brockton Contributory Retirement System (the System) was established under Massachusetts General Laws (MGL), Chapter 32, and is regulated by the Massachusetts Public Employee Retirement Administration Commission (PERAC). The System provides retirement benefits to the City of Brockton, the Brockton Area Transit Authority, the Brockton Redevelopment Authority and the Brockton Housing Authority employees and their beneficiaries. The System is governed by a five-member board (the Board) comprised of the City of Brockton's Auditor (ex-officio), two members elected by the System's participants, one member appointed by the City of Brockton's Mayor, and one member elected by the System's Board members.

Measurement Focus and Basis of Accounting

The System's financial statements are presented using the flow of economic resources measurement focus and use the accrual basis of accounting.

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 reported at fair value. Fair value is based on quotations from a national securities exchange except for alternative investments, for which fair values are estimated as detailed below.

Real Estate, Private Equity, and Structured Credit Funds

The fair values of these types of investments have been determined by third-party investment managers using the net asset value (NAV) per share (or its equivalent) on the System's ownership interest in partner's capital.

Basis of Investment Transactions

Purchases and sales of investments are recorded on the trade date. Transactions remaining unsettled as of year-end are recorded as payables for securities purchased and as a receivable for securities sold.

Revenue Recognition

Contributions are recognized as additions in the period when they become due pursuant to formal commitments, statutory or contractual requirements. Investment income is recognized when earned.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2018**

NOTE 1 SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

Benefits and Refunds

Benefits and refunds are recognized as deductions when incurred.

Administrative Expenses

Administrative expenses are financed by investment income.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of additions and deductions during the reporting period. Fair values of real estate funds, private equity funds, and structured credit funds have been estimated in the absence of readily available market values, and these estimates may be materially different than values that would have been used had a ready market existed.

NOTE 2 PLAN DESCRIPTION

General

The System is a cost-sharing multiple-employer public defined benefit pension plan. Membership in the System is mandatory immediately upon the commencement of employment for all permanent full-time employees working at least 20 hours weekly, except for the City of Brockton's schoolteachers and certain school administrators, who participate in the Massachusetts Teachers' Retirement System.

Membership in the System was as follows at December 31, 2018:

Active Members	1,880
Inactive Members	538
Retirees and Beneficiaries Currently Receiving Benefits	<u>1,284</u>
Total	<u><u>3,702</u></u>

Significant Plan Provisions and Requirements

Pursuant to MGL, Chapter 32, the System provides retirement, disability, and death benefits to plan members and their beneficiaries up to a maximum of 80% of a member's final three-year or five-year average salary. In addition to compensation, benefits are based upon a member's age and length of creditable service.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2018**

NOTE 2 PLAN DESCRIPTION (CONTINUED)

Significant Plan Provisions and Requirements (Continued)

Members of the System become vested after 10 years of creditable service. Normal retirement occurs at age 65 or age 67 (if hired on or after April 2, 2012), except for the City of Brockton's police officers and firefighters, whose normal retirement age is 55 (age 57 if hired on or after April 2, 2012).

For employees hired prior to April 2, 2012, the annual amount of the retirement allowance is based on the member's final three-year average salary multiplied by (1) the number of years and full months of creditable service at the time of retirement and (2) a percentage based on age at retirement in accordance with a schedule provided by state law. Assuming normal retirement at age 65, this percentage is 2.5%, which is reduced for individuals who retire prior to age 65 to reflect the longer pay-out period. A member's final three-year average salary is defined as the greater of the highest consecutive three-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last three years of creditable service prior to retirement.

For employees hired on or after April 2, 2012, the annual amount of the retirement allowance is based on the member's final five-year average salary multiplied by (1) the number of years and full months of creditable service at the time of retirement and (2) a percentage based on age at retirement in accordance with a schedule provided by state law. Assuming normal retirement at age 67, this percentage is 2.5%. A member's final five-year average salary is defined as the greater of the highest consecutive five-year average annual rate of regular compensation and the average annual rate of regular compensation received during the last five years of creditable service prior to retirement.

Employees may elect early retirement after 20 years of service or at any time after attaining age 55 or age 60 with 10 years of eligible service. Plan members who become permanently and totally disabled may be eligible to receive a disability retirement allowance. The amount of benefits to be received depends on several factors, including the member's age, compensation, veteran status, years of service, and whether or not the disability is work-related. In addition, certain death benefits exist for beneficiaries of employees who die in active service.

Pursuant to MGL, Chapter 32, Section 3(8)(c), for members leaving the System's employment to work for other Massachusetts governmental units, the System transfers their accumulated account balances and creditable service to the retirement system of their new employer. Other such retirement systems are in turn required to make comparable transfers to the System for employees coming to work for a participating employer. Liability for the service transfer is not calculated until the member's actual retirement date. Per statute, the actuary considers length of service as well as acceptance of military service credit and salary cap provisions (if applicable) in calculating the liability.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2018**

NOTE 3 DEPOSITS AND INVESTMENTS

Investment Policy

Deposits and investments made by the System are governed by Chapter 32 of the MGL. The System engages investment managers that adhere to MGL c. 32, sec 23(3), the “Prudent Person” rule, which permits (among other things) the investment in fixed income and equity mutual funds, real estate funds, private equity funds, and structured credit fund investments.

The Board has the authority for establishing and amending investment policy decisions. Based on the investment objectives and constraints of the System, and based on an annual review of the asset allocation and asset classes, the Board will specify a long-term target allocation for each class of permissible assets. These targets will be expressed as a percentage of the total portfolio, and will have ranges surrounding them, allowing for the portfolio to maintain policy through market fluctuations.

The long-term target allocations are intended as strategic goals. Thus, it is permissible for the overall System’s asset allocation to deviate from the long-term target, as would likely occur during manager transitions, asset class restructurings, and other temporary changes in the System. Surplus cash flows are utilized to maintain the asset management structure. Should these cash flows not be sufficient to reallocate the plan according to policy, the transfer of assets may occur between managers. At least annually, the Board reevaluates the portfolio weightings by asset class and adjustments are made accordingly. The following identifies the asset allocation policy as of December 31, 2018:

<u>Asset Class</u>	<u>Target</u>
Domestic Equity	21.0 %
Global Equity	41.0
Domestic Fixed Income	15.5
International Fixed Income	6.0
Real Estate	4.0
Alternatives	8.5
Other	4.0

Rate of Return

For the year ended December 31, 2018, the annual money-weighted rate of return on investments, net of investment expense, was -5.71%. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2018**

NOTE 3 DEPOSITS AND INVESTMENTS (CONTINUED)

Deposits – Custodial Credit Risk

Custodial credit risk for deposits is the risk that, in the event of a bank failure, the System's deposits may not be recovered. The System's policy for custodial credit risk of deposits is to rely on FDIC insurance coverage. As of December 31, 2018, bank deposits totaling \$13,137,768 were exposed to custodial credit risk of \$12,887,768. The carrying amount of deposits totaled \$12,882,920 at December 31, 2018.

Investments Summary

The System's investments at December 31, 2018 are presented below. All investments are presented by investment type, with debt securities presented by maturity.

<u>Investment Type</u>	<u>Fair Value</u>	<u>Investment Maturities Less Than One Year</u>
DEBT SECURITIES		
Money Market Mutual Funds	\$ 183,567	\$ 183,567
Fixed Income Mutual Funds	95,431,642	95,431,642
Total Debt Securities	<u>95,615,209</u>	<u>\$ 95,615,209</u>
OTHER INVESTMENTS		
Equities and Equity Mutual Funds	206,933,555	
Real Estate Funds	21,896,245	
Private Equity Funds	34,750,189	
Structured Credit Funds	13,230,204	
Total Other Investments	<u>276,810,193</u>	
Total Investments	<u>\$ 372,425,402</u>	

Investments – Interest Rate Risk of Debt Securities

Interest rate risk for debt securities is the risk that changes in interest rates of debt securities will adversely affect the fair value of an investment. The System's policy for interest rate risk of debt securities is to use diversification to minimize the exposure to interest rate risks in the aggregate investment portfolio.

Investments – Custodial Credit Risk

Custodial credit risk for investments is the risk that, in the event of the failure of the counterparty, the System will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. The System does not have a policy for custodial credit risk of investments. As of December 31, 2018, the System was not exposed to custodial credit risk.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2018**

NOTE 3 DEPOSITS AND INVESTMENTS (CONTINUED)

Investments – Credit Risk of Debt Securities

Credit risk for debt securities is the risk that an issuer or other counterparty to a debt security will not fulfill its obligations. The System's policy for credit risk of debt securities is to use diversification to minimize the exposure to credit risks in the aggregate investment portfolio and primarily invest in fixed income securities that are rated investment grade or better. As of December 31, 2018, the credit quality ratings of the System's debt securities are unrated by a nationally recognized statistical rating organization.

Deposits and Investments – Foreign Currency Risk

Foreign currency risk is the risk that fluctuations in exchange rates will adversely affect the fair value of an investment or a deposit. The System's policy for foreign currency risk is to diversify the foreign countries and currencies within its pooled international investment portfolio. As of December 31, 2018, the System had indirect exposure to foreign currency risk for certain equity mutual fund investments in the amount of \$121,227,375.

Investments – Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of the System's investment in a single issuer. The System does not have a policy for concentration of credit risk. As of December 31, 2018, the System was not exposed to concentration of credit risk.

Fair Value Measurements

The System categorizes its fair value measurements within the fair value hierarchy established by accounting principles generally accepted in the United States of America. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. The System has the following recurring fair value measurements as of December 31, 2018:

Investment Type	Fair Value	Fair Value Measurements Using		
		Level 1	Level 2	Level 3
Equity Securities:				
Equity Mutual Funds	\$ 206,923,199	\$ 206,923,199	\$ -	\$ -
Common Stock	10,356	10,356	-	-
Total Equity Securities	206,933,555	206,933,555	-	-
Debt Securities:				
Money Market Mutual Funds	183,567	183,567	-	-
Fixed Income Mutual Funds	95,431,642	95,431,642	-	-
Total Debt Securities	95,615,209	\$ 95,615,209	\$ -	\$ -
Investments Measured at the Net Asset Value (NAV):				
Real Estate Funds	21,896,245			
Private Equity Funds	34,750,189			
Structured Credit Funds	13,230,204			
Total Investments Measured at the NAV	69,876,638			
Total Investments	\$ 372,425,402			

Debt and equity securities classified in Level 1 of the fair value hierarchy are valued using prices quoted in active markets for those securities.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2018**

NOTE 3 DEPOSITS AND INVESTMENTS (CONTINUED)

The valuation method for investments measure at the net asset value (NAV) per share (or its equivalent) is presented on the following table.

Investments Measured at the NAV

	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Real Estate Funds ⁽¹⁾	\$ 21,896,245	\$ 988,674	N/A ⁽¹⁾	N/A ⁽¹⁾
Private Equity Funds ⁽²⁾	34,750,189	3,101,103	N/A ⁽²⁾	N/A ⁽²⁾
Structured Credit Funds ⁽³⁾	13,230,204	-	Annually	65 Days
Total Investments Measured at the NAV	<u>\$ 69,876,638</u>			

⁽¹⁾ Real Estate Funds: This type includes 6 real estate funds that invest primarily in U.S. commercial real estate and value added opportunities. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. There is one investment with an approximate value of \$18,000,000 for which the investment can be redeemed annually, with a redemption notice period of 65 days. The remaining investments can never be redeemed with the funds. Distributions from each of these funds will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over the next 1 to 5 years.

⁽²⁾ Private Equity Funds: This type includes 15 private equity funds that consist primarily of limited partnership interests in corporate finance and venture capital funds. Corporate finance investments may include leveraged buy-out, industry consolidation, growth or fundamental business change, acquisitions, refinancing and recapitalization, mezzanine investments, and distressed and turnaround strategies. Venture capital investments include start-up companies and companies developing new business solutions and technologies. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. There are three investments with an approximate value of \$16,300,000 for which the investments can be redeemed annually, with a redemption notice period of 65 days. The remaining investments can never be redeemed with the funds. Distributions from each of these funds will be received as the underlying investments of the funds are liquidated. It is expected that the underlying assets of the funds will be liquidated over the next 1 to 8 years.

⁽³⁾ Structured Credit Funds: This type includes 1 fund that invests in a portfolio comprised of collateralized debt obligations (CDO's) and other structured credit investments. The fair values of the investments in this type have been determined using the NAV per share (or its equivalent) of the System's ownership interest in partners' capital. The investment can be redeemed annually, with a redemption notice period of 65 days.

BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2018

NOTE 4 FUNDING POLICY

Plan members are required to contribute to the System at rates ranging from 5% to 9% of annual compensation, depending on their employment date. Members hired after December 31, 1978 must contribute an additional 2% of regular compensation in excess of \$30,000. These deductions earn interest at a rate determined by PERAC that vest based upon years of service. The participating employers are required to pay into the System 100% of the actuarially determined contribution. For the year ended December 31, 2018, employer contributions totaled \$26,029,652 and plan member contributions totaled \$9,578,961.

Cost-of-living adjustments (COLA) must be granted by the Board and are the responsibility of the System. COLA cannot exceed 3% of the first \$12,000 in benefits, unless the System elects to increase the maximum base retirement allowance in multiples of \$1,000.

NOTE 5 NET PENSION LIABILITY

The components of the net pension liability of the System at December 31, 2018, were as follows:

Total Pension Liability	\$ 679,896,326
Plan Fiduciary Net Position	<u>(385,591,525)</u>
Net Pension Liability	<u>\$ 294,304,801</u>
 Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	 56.71 %

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
 NOTES TO FINANCIAL STATEMENTS
 DECEMBER 31, 2018**

NOTE 5 NET PENSION LIABILITY (CONTINUED)

Actuarial Methods and Assumptions

The total pension liability was determined using the January 1, 2018 actuarial valuation. The following actuarial methods and assumptions apply to all periods included in the measurement:

METHODS

Actuarial Cost Method	Entry Age Normal
Amortization Method	
Remaining Amortization Period	

Asset Valuation Method	Fair Value
	Assets as of the valuation date reduced by the sum of:
	a) 20% of gains and losses of the prior year,
	b) 40% of gains and losses of the second prior year,
	c) 60% of gains and losses of the third prior year,
	d) 80% of gains and 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 80% or more than 120% of market value.

ASSUMPTIONS

Inflation	3.00%
Salary Increases	Based on service, 6% graded down to 4.25% for Group 1 Based on service, 7% graded down to 4.75% for Group 4
Investment Rate of Return	7.75%, net of investment expenses
Cost of Living Adjustment	3.0% of the first \$12,000 annually
Payroll Growth	4% per year
Mortality	Healthy Retiree - RP-2000 Mortality Table projected projected generationally with Scale BB for males and females
	Disabled Retiree - RP-2000 Mortality Table set forward three years for all disabled members
Retirement Rates	General Employees - 1.0% and 1.5% for males and females, respectively, beginning at age 50 ranging to 30.0% and 20.0% for males and females, respectively, ending at age 69
	Police and Fire - 2.0% beginning at age 50 ranging to 100.0% at age 65

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2018**

NOTE 5 NET PENSION LIABILITY (CONTINUED)

Actuarial Methods and Assumptions (Continued)

The long-term expected rate of return on pension plan investments was determined using a best-estimate ranges of expected future nominal rates of return (expected returns, net of investment expense and inflation) developed for each major asset class using an econometric model that forecasts a variety of economic environments and then calculates asset class returns based on functional relationships between the economic variables and the asset classes. Best estimates of arithmetic rates of return for each major asset class included in the System's target asset allocation as of December 31, 2018 are summarized on the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic Equity	21.0 %	6.20 %
Global Equity	41.0	7.30
Domestic Fixed Income	15.5	3.60
International Fixed Income	6.0	6.30
Real Estate	4.0	4.80
Alternatives	8.5	9.00
Other	4.0	4.00

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 that contributions will continue to follow the pattern of contributions observed over the last five years. 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 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 7.75%, 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 (6.75%) or 1-percentage-point higher (8.75%) than the current rate:

	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
Net Pension Liability	<u>\$ 367,862,822</u>	<u>\$ 294,304,801</u>	<u>\$ 231,652,008</u>

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
NOTES TO FINANCIAL STATEMENTS
DECEMBER 31, 2018**

NOTE 6 LEGALLY REQUIRED RESERVE ACCOUNTS

The balance in the System's legally required reserves as of December 31, 2018 are as follows:

<u>Description</u>	<u>Amount</u>	<u>Purpose</u>
Annuity Savings Fund	\$ 100,431,547	Active members' contribution balance
Annuity Reserve Fund	25,946,858	Retired members' contribution account
Military Service Credit Fund	100,043	Amounts appropriated to fund military service time
Pension Reserve Fund	230,467,539	Amounts appropriated to fund future retirement
Pension Fund	28,645,538	Remaining net position
Total	<u>\$ 385,591,525</u>	

All reserve accounts are funded at levels required by state law.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
REQUIRED SUPPLEMENTARY INFORMATION
DECEMBER 31, 2018
(SEE INDEPENDENT AUDITORS' REPORT)**

SCHEDULE OF CHANGES IN EMPLOYER NET PENSION LIABILITY AND RELATED RATIOS¹

	2018	2017	2016	2015	2014
TOTAL PENSION LIABILITY					
Service Cost	\$ 13,935,456	\$ 13,782,419	\$ 13,252,326	\$ 11,641,512	\$ 10,817,393
Interest	50,477,295	48,362,463	46,791,714	44,359,746	41,739,197
Differences Between Expected and Actual Experience	-	4,943,799	-	11,431,816	-
Changes of Assumptions	-	22,366,074	-	-	17,356,197
Benefit Payments, Including Refunds of Member Contributions	(43,801,798)	(41,835,507)	(39,288,216)	(38,024,658)	(37,937,119)
NET CHANGE IN TOTAL PENSION LIABILITY	20,610,953	47,619,248	20,755,824	29,408,416	31,975,668
Total Pension Liability - Beginning	659,285,373	611,666,125	590,910,301	561,501,885	529,526,217
TOTAL PENSION LIABILITY - ENDING (a)	<u>\$ 679,896,326</u>	<u>\$ 659,285,373</u>	<u>\$ 611,666,125</u>	<u>\$ 590,910,301</u>	<u>\$ 561,501,885</u>
PLAN FIDUCIARY NET POSITION					
Contributions - Employer	\$ 26,029,652	\$ 25,014,425	\$ 20,072,463	\$ 19,247,619	\$ 19,332,315
Contributions - Employer - Military Service Credit					
Contributions - Member	9,578,961	9,184,633	8,825,940	8,302,780	8,467,701
Net Investment Income	(23,618,417)	55,086,280	30,472,468	(7,554,439)	15,837,436
Benefit Payments, Including Refunds of Member Contributions	(43,801,798)	(41,835,507)	(39,288,216)	(38,024,658)	(37,937,119)
Other (Net)	-	-	(366,882)	(798,475)	(406,376)
Administrative Expense	(675,515)	(785,306)	(779,411)	(686,453)	(677,927)
NET CHANGE IN PLAN FIDUCIARY NET POSITION	(32,487,117)	46,664,525	18,936,362	(19,513,626)	4,616,030
Plan Fiduciary Net Position - Beginning	418,078,642	371,414,117	352,477,755	371,991,381	367,375,351
PLAN FIDUCIARY NET POSITION - ENDING (b)	<u>\$ 385,591,525</u>	<u>\$ 418,078,642</u>	<u>\$ 371,414,117</u>	<u>\$ 352,477,755</u>	<u>\$ 371,991,381</u>
NET PENSION LIABILITY - ENDING (a) - (b)	<u>\$ 294,304,801</u>	<u>\$ 241,206,731</u>	<u>\$ 240,252,008</u>	<u>\$ 238,432,546</u>	<u>\$ 189,510,504</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	56.71 %	63.41 %	60.72 %	59.65 %	66.25 %
Covered Payroll	\$ 97,380,339	\$ 90,223,109	\$ 93,327,963	\$ 89,738,426	\$ 76,707,094
Net Pension Liability as a Percentage of Covered Payroll	302.22 %	267.34 %	257.43 %	265.70 %	247.06 %

¹ Data is being accumulated annually to present 10 years of the reported information.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
REQUIRED SUPPLEMENTARY INFORMATION
DECEMBER 31, 2018
(SEE INDEPENDENT AUDITORS' REPORT)**

**SCHEDULE OF EMPLOYER CONTRIBUTIONS
(IN THOUSANDS)**

	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Actuarially Determined Contribution	\$ 26,029	\$ 25,014	\$ 20,072	\$ 19,290	\$ 19,290
Contributions in Relation to the Actuarially Determined Contribution	<u>26,029</u>	<u>25,014</u>	<u>20,072</u>	<u>19,248</u>	<u>19,332</u>
Contribution Deficiency (Excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ 42</u>	<u>\$ (42)</u>
Covered Payroll	\$ 90,223	\$ 93,328	\$ 89,738	\$ 76,707	\$ 76,378
Contributions as a Percentage of Covered Payroll	28.85%	26.80%	22.37%	25.09%	25.31%

(continued)

	<u>2013</u>	<u>2012</u>	<u>2011</u>	<u>2010</u>	<u>2009</u>
Actuarially Determined Contribution	\$ 17,239	\$ 16,597	\$ 13,788	\$ 11,517	\$ 11,117
Contributions in Relation to the Actuarially Determined Contribution	<u>17,283</u>	<u>16,639</u>	<u>13,834</u>	<u>11,618</u>	<u>11,117</u>
Contribution Deficiency (Excess)	<u>\$ (44)</u>	<u>\$ (42)</u>	<u>\$ (46)</u>	<u>\$ (101)</u>	<u>\$ -</u>
Covered Payroll	\$ 74,417	\$ 74,417	\$ 75,433	\$ 74,357	\$ 74,357
Contributions as a Percentage of Covered Payroll	23.22%	22.36%	18.34%	15.62%	14.95%

(concluded)

SCHEDULE OF INVESTMENT RETURNS¹

	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Annual Money-Weighted Rate of Return, Net of Investment Expense	(5.71)%	15.05 %	8.80 %	(2.06)%	4.38 %

¹ Data is being accumulated annually to present 10 years of the reported information.

**BROCKTON CONTRIBUTORY RETIREMENT SYSTEM
NOTE TO REQUIRED SUPPLEMENTARY INFORMATION
DECEMBER 31, 2018**

NOTE 1 SCHEDULE OF EMPLOYER CONTRIBUTIONS

The following methods and assumptions were used to determine the most recent actuarially determined contribution rates:

Valuation Date	January 1, 2016
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METHODS

Actuarial Cost Method	Entry age normal cost
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Asset Valuation Method	Fair value
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ASSUMPTIONS

Inflation	3.00%
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Salary Increases	Based on years of service, ranging from 7.00% at 0 years of service decreasing to 3.75% after 9 years of service
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Investment Rate of Return	8.0%, net of investment expenses
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Cost of Living Adjustment	3.0% of the first \$12,000 annually
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Mortality	Healthy Retiree - RP-2000 Mortality Table projected generationally with Scale BB for males and females
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Disables Retiree - RP-2000 Mortality Table set forward two years for all disabled members

Retirement Rates	General Employees - 1.0% and 1.5% for males and females, respectively, beginning at age 50 and ranging to 30.0% and 20.0% for males and females, respectively, and ending at age 69.
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Police and Fire - 1.0% beginning at age 45, ranging to 100.0% at age 65, and ending at age 69.
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